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TRANSACTIONS

OF THE

Forty-Sixth Session

OF THE

HOMŒOPATHIC MEDICAL SOCIETY

OF THE

STATE OF PENNSYLVANIA

Held at Scranton, September 21, 22 and 23, 1909

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To the Officers and Members of the Homœopathic Medical Society of the State of Pennsylvania:

The Committee on Publication herewith presents the Transactions of the Forty-Sixth Session of the Society. Many thanks are due the writers of papers for their promptness in completing papers which were unfinished at the time of the meeting.

E. M. Gramm, M. D.
Ella D. Goff, M. D.
G. B. Moreland, M. D.

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TRANSACTIONS

OF THE

FORTY-SIXTH SESSION

OF THE

Homœopathic Medical Society

OF THE

STATE OF PENNSYLVANIA.

Scranton, September 21, 22 and 23, 1909.

The President, D. P. Maddux, M. D., called the meeting to order on the morning of September 21, 1909.

The Divine blessing was invoked by the Rev. Griffin W. Bull, D. D.

Dr. H. F. Heilner, President of the Homœopathic Medical Society of Lackawanna County, then introduced the Hon. Myer Kabatchnick, Assistant City Solicitor of Scranton, as follows:

Mr. President, Members of the Homœopathic Medical Society of the State of Pennsylvania, and Visiting Friends:

Scranton is noted for its hospitality; and so that no mistake shall be made on this point, we have asked our Mayor to be here this morning to welcome you; but, owing to stress of business which necessitates his being absent from the city, he is unable to be with us. He has, however, sent an excellent representative, one of his official family, who will speak to you on behalf of the city, and whom I now have the honor of introducing to you, Mr. Myer Kabatchnick, Assistant City Solicitor of the City of Scranton.

Hon. Myer Kabatchnick thereupon delivered the following

ADDRESS OF WELCOME:

Mr. President, Ladies and Gentlemen: As Dr. Heilner has already advised you, I also regret that his Honor the Mayor is unavoidably absent from the city this morning. In his absence I assure you it is a privilege and a pleasure to convey to you his greetings, and on his behalf to extend to you the official welcome of the city.

Scranton is proud to have you here for the third time in convention. It speaks well, also, for the City of Scranton that you have honored it by paying it this third visit. We are indeed proud, and have cause to be proud, in having you here. Although personally a member of that even greater profession, the law, I am permitted to be liberal this morning in submitting that you gentlemen are members of that high, dignified and lofty profession of medicine; that your services to humanity in the past have been invaluable, and that humanity will ever be indebted to you, and that with the progress that we have witnessed in your profession as well as in all branches of science in the past centuries and in the past decades, we are sure that your efforts will be even greater in the future and that humanity is but beginning to learn to appreciate how invaluable your labors, your sacrifices and your efforts towards it have been.

I have read but recently of how in England it is becoming a most expensive proposition to enter the profession of medicine; that the years of study that must be gone through are increasing year by year; and that the material remuneration is gradually diminishing so that it is becoming practically a profession of a man who can afford to sacrifice his time, perhaps his entire life, in the cause of humanity. I doubt whether the man of your profession is ever paid materially what his services are worth; but I think in all higher professions the theory must in time prevail (as it is beginning to prevail abroad) that the man who enters it, enters it with the full spirit of sacrifice towards mankind.

Proud as we are to have you in our midst, I beg to suggest that your stay in our midst ought to be profitable and enjoyable. We are proud of our city for its beautiful natural location, for its thrifty and industrious people, for its great civic pride. We have here also, in the interest of your own profession, all that tends for

the health and welfare of the community. Again I beg to assure you that we are proud to have you here, and we hope your stay will be most enjoyable; and that we will be glad to be of service to make that stay enjoyable.

Dr. H. F. Heilner then delivered the following

ADDRESS OF WELCOME.

Mr. President, Members of the Homœopathic Medical Society of the State of Pennsylvania, and Visiting Friends: To me falls the duty and honor of extending to you a most cordial greeting on behalf of Homœopathy in Northeastern Pennsylvania, and of the Homœopathic Medical Society of Lackawanna County.

Homœopathy gladly welcomes you, as your presence here is an inspiration to it throughout this part of the State. Those of you who were here six years ago will find that Homœopathy has not labored unfruitfully among us. You will find that the number of physicians that personally greeted you have greatly been augmented, and whose clientele number many thousands. Six years ago you saw a small hospital and dispensary in a small building, laboring with scant facilities in its circumscribed space; today you will find a noble hospital, having arisen amid great discouragements from small beginnings to the present position of one of the most prosperous and important of the benevolent institutions of our city. This was made possible by our ladies, God bless them, through whose benevolence and energy this work has been accomplished.

You have come a third time to claim our hospitality. It is yours to claim; and I trust you will receive and enjoy it as wholeheartedly as it is offered. We know that our meetings are primarily scientific, and not social, in aims and accomplishments; therefore it is our aim not to allow any entertainment to interfere with the serious work of the session. We also know that our social obligations are necessary to the success of the society; therefore we have left nothing undone that would make your stay among us one of pleasure. If anything has been forgotten, I assure you that it has not been intentional.

Our Local Committee on Membership has been working diligently to increase the membership of the State Society. Let us hope we may have a good report. Every Homœopathic physician

in this great Commonwealth should be identified with this Society. Our experience of last spring at Harrisburg, where we were called to oppose the machinations of a most unscrupulous enemy, who struck at the foundation of our great republic of liberty, shows more than ever the necessity of our being united for the protection of our common interests. As far as I know, when fully aroused, Homœopathic physicians never fail to accomplish any purpose on behalf of which they make united effort. Neither the numbers, nor the labors of their opponents, nor the methods used against them, nor the sacrifices required, have deterred them from their purpose. Not only have they won, but in no instance has victory been postponed for any great length of time. All that is necessary to success is concentration of effort and unity of purpose.

Our program affords an elegant opportunity for scientific investigation. It is replete with scientific subjects, presented by some of the brightest minds of our profession. It is also a lengthy program, so I will again bid you a heartfelt welcome on behalf of the Lackawanna County Homœopathic Medical Society, trusting that this may prove the most enjoyable, the most profitable and the most glorious meeting the State Society has ever held.

THE PRESIDENT: I would request Dr. J. H. McClelland, of Pittsburgh, to respond, in the name of the Society, to these cordial greetings.

Dr. J. H. McClelland then delivered the following

RESPONSE TO THE ADDRESS OF WELCOME.

Mr. President, I do not know that I have any special fitness for the office that you have assigned to me, except it might be simply length of service.

I recall with great pleasure, with a thrill of pleasure, that I was present at the birth of this Society. Not all of you gentlemen remember that, except a few of the bald-headed like Dr. Bunting and one or two others; but that event occurred just forty-three years ago. I was not then a member; but as soon as I got my diploma, one year later, I became a member of this Society; hence I date back forty-two years, and you would never believe it.

I want to speak for this Society and for the President the appre-

ciation we have of the kind welcome that has been given us by the President of the Lackawanna County Society, as well as by the representative of his Honor the Mayor. We all know—that is, all of us who keep at all in touch with the march of events—we all know the work that has been done in the last few years by this growing, working Society. You can only judge what a Society is, or what it is for, by the work it does. The Scranton hospital is a credit to this organization and to this city. The hospital growth is the measure of the success and standing of any body in any community. Where you find a good growing hospital, there you find an earnest working set of doctors and doctors' friends in the community in general.

I will not detain you with anything further upon this subject, other than to say that we very much appreciate the work that has been done by this Society and its local committee, and the words of welcome spoken to us by its President. We also appreciate fully the kind and earnest and eloquent welcome that has been delivered to you by the representative of the Mayor of this city. He well has explained to you that Scranton is a growing municipality, a municipality that is a credit to the Commonwealth and which is second to none; the third largest city in that Commonwealth and steadily climbing up, so that I suppose Pittsburgh will be left in the rear before a great while. We very sincerely appreciate this; and all we would specially ask of his Honor and his representative, is that they will be particularly gentle to the erring, and we will try and keep our membership in as good order as is possible under the circumstances.

The President, D. P. Maddux, M. D., next delivered the

ADDRESS OF THE PRESIDENT.

Fellow Members of the Homœopathic Medical Society of the State of Pennsylvania:

Permit me first to give an expression of appreciation of the high honor you have conferred upon me by electing me to the Presidency of this Society; I am keenly sensitive of this evidence of your esteem, and nothing in inclination or effort on my part has been spared to make this meeting a success.

We meet again in this, our forty-sixth session, under conditions and circumstances well calculated to inspire the Medical mind with greater pride in his calling, and a more fixed conviction of the better equipping himself for it.

We know that doctors do not "know it all;" we know that the realm of the unknown and the unexplored in Medicine is a larger territory than is generally supposed; and so we come together again as students, if you please, to give and to receive a quota of information; to get from personal contact a renewed sense of comradeship, and to give and to get the impulse for better things.

Let us try and get into this atmosphere at the very start, let us try and create it, and to make the meeting notable for the profit we can obtain and distribute.

This Society has some very clear cut and well defined duties and responsibilities; not only as an organization that at its annual meeting takes up the deliberation and discussion of medical and scientific subjects, but as the representative organization of our branch of the medical profession in this State, it must give most attentive consideration to those problems that have to do with the welfare and advancement of homœopathy, and of the maintainance and advancement of those agencies upon which its propagation and permanency depend.

The Homœopathic School of Medicine is not a sectarian body; it is an organization, a division, a school, if you please, forced to maintain a separate and independent entity, driven from the main body of medical practitioners because forsooth we choose to follow the truth as it has been given to us to see the truth, and we retain our separate entity because the dominant body has failed to provide for the teaching of our special form of therapeutics. It could then swallow the camel of nauseating, dangerous and senseless compounds, long since abandoned; but it strained at the gnat of homœopathy, although it has since adopted much that homœopathy introduced; in most instances, I regret to say, without giving credit to the source from which it obtained it.

This division of medical men has had its beneficial features; the attention of thousands of physicians has been attracted to the development of the law of Similia, as it would not have been had we

merely practiced it as a therapeutic specialty, and remained an integral part of the general medical body.

In its mere negative proof, that recovery would take place without noxious and dangerous drugging, homœopathy made a valuable contribution to suffering mankind; but in its positive proof, that recovery takes place more speedily and safely when nature is assisted along her own chosen lines of resistance to illness, by the methods enunciated by Hahnemann, homœopathy has fairly won her proud position.

Roswell Park in his "History of Medicine" says: "Medical thought, so called, is just as one-sided today as at any time in the history of the art," and further endorses the remark of a modern historian who says: "The medicine of the present embraces nothing but a theorem of investigation by the sense."

It is this one-sidedness of the Old School that causes and keeps medical men apart; assuming a position of sympathetic attention towards truth in any form, making prodigious efforts each year to find new methods for the cure of disease, yet absolutely neglecting to incorporate with its teachings and experimentations, a method of therapeutic cure that thousands of reputable physicians are verifying every day of their lives.

Homœopathy as a distinct School bases its claim solely upon a system of therapeutics. In Anatomy, Chemistry, Physiology, Pathology, Biology, Opthamology, Hygiene, Toxicology, Bacteriology, the mechanical and operative parts of Surgery, Obstetrics and Gynecology, we stand on absolutely common ground; indeed we go further, and in our college teach the Materia Medica and Therapeutics of the Old School, and give our students a working knowledge of their methods.

Could any School, does any School on earth show more of a liberal, and less of a sectarian spirit? I only wish that those who make such a constant and odious use of the term "sectarian" were imbued with as tolerant and liberal a spirit!

What if some of the earlier followers of Hahnemann did, in their enthusiastic delight at the marvelous results obtained from his methods, make claims that were specious and not well founded? Are they to be compared in number with the ridiculous assertions

and practices of those who drove Hahnemann out of professional affiliation, and if the technicality upon which he was expelled, that of dispensing his own medicines was enforced today, I am afraid that there would not be enough members left in the Old School societies to supply the tablet houses with salesmen.

You may say, why thrash out this ancient history? Because this ancient history has a very vital and pertinent relationship to present day conditions; because we stood quiet too long under the reproach of "sectarianism" made by those who have not yet assumed the broad and liberal attitude of our own School.

The blight of the first two thousand years of medical history was the slavish devotion to tradition, and the opinions of a few dominant medical minds; the curse of the past two hundred years has been a spirit of intolerance. That spirit of intolerance is not confined to the issues existing between Schools; but it exists to a most unfortunate degree within our own ranks. Because a certain group of men see fit to interpret the application of the Law of Similia in one way, the group that takes a different viewpoint sees in that variance of opinion a sufficient warrant to raise a discordant issue. We must each do our share towards obliterating this foolish and pernicious tendency.

The Law of Similia has a broader and a wider application than perhaps even Hahnemann appreciated; serum therapy and the opsonic index are but the development and the explanation of it; and who can be assured that the real curative range of many drugs, given in so-called physiologic doses, may not be Homœopathic, the conditions there met and cured, perhaps being the simimilimum to the drug's toxic range of action.

Hahnemann used elimination and antidotes in cases of poison; and there are now many well defined poisons engendered within the system not recognized in his day that must first be eliminated and antidoted before the curative range of Homœopathic therapy has a fair opportunity.

It is not that the system of therapeutics promulgated by Hahnemann is less true that those within its ranks do not confine themselves so exclusively to the homœopathic remedy in the treatment of disease. Like Hahnemann, its members are progressive, and all

surgical, mechanical and other aids, within their proper field, are welcomed by them.

Hahnemann advised drugs, where we now use the knife, because in his day operative surgery, as we now know it, was absolutely unknown. The only fair comparison to be made of Hahnemann is to compare his opinions and methods, as applied to the cure of disease with others of his time, and to contrast his methods and recommendations in the treatment of diseases that are found true and applicable today, with those that are found true and applicable today and which were recommended by those of his time who opposed and persecuted him.

Two facts are certain: Homœopathy's distinct and valuable, I should say invaluable, contribution to the threapeutic knowledge of the world, and the fact that as conditions now exist, Homœopathy would not be taught without the maintainance of a separate medical organization to teach it; these facts are apparent and admitted, and the inevitable logic of the situation is, that however desirable organic union of all educated and ethical medical men may be, that union cannot be effected so long as the majority school maintains its spirit of intolerant indifference towards our own.

This spirit of intolerance is conspicuously illustrated by the University of Pennsylvania, whose Provost, with arrogant assumption, stated he believed its medical department should have the right of "medical monopoly" in this State; yet this institution recognizes scholarship and scientific attainments as a test for admission to graduate and post-graduate work less than any other institution in the State; and it, a State institution, will not admit men to undergraduate and post-graduate study whose educational qualifications are uncontested, if they were trained in schools in which Homœopathy is taught; no matter if those schools taught all of the other branches of general medicine just as thoroughly, no matter if the State Board of Medical Examiners showed that he had fully qualified, no matter if he was willing to give ample evidence of his attainments, this will not satisfy this "Medical Monopolist." It asks first, not have you the knowledge, but where did you get it?

The term "Sectarian" cannot with any precision or fairness be applied to the homœopathic school of medicine, whatever our oppo-

nents may say, the only official, and by us recognized definition of a "Homœopathic Physician" is one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics, and observes the law of Similia. All that pertains to the great field of medical learning is his, by tradition, by inheritance, by right."

The matter of medical licensure is a topic of such manifest interest and importance that its consideration should receive the earnest attention of this body.

It is apparent, from the different methods and standards of the various State Medical Examining and Licensing Boards, that no single method or standard has yet been found capable of universal applications.

It is inherent to our form of constitutional government that it should be a right reserved to the State to regulate its own internal affairs in this matter, and however desirable a national standard would be, it could only be established by an alteration of our national constitution which would deprive States of certain rights now possessed by them, or by the voluntary action of all the States in the creation of a single standard.

I think that I voice the almost universal opinion of the profession, that medical graduates should be permitted to practice their calling in the Commonwealth where they have received their diploma without being subjected to further examinations; manifestly these results can only be accomplished when the minimum standard and test of the college graduate are equivalent or higher than the tests and standards of the State Examining Board, and further, that some provision be made for the supervision of the medical colleges so as to insure the maintainance of a high standard.

In brief then, create a department whose duty it shall be to see that the colleges adequately train their graduates, and then permit the graduates to practice anywhere within the Commonwealth without further restrictions as to their medical qualifications.

A personal experience of a number of years as a member of our State Medical Examining Board leads me to assert with positiveness that the present method of examination is an unfair and inadequate test of a man's qualifications to practice medicine, and however the law is amended in detail, so as to alter the character of post-graduate

tests, it impresses me as wrong in principle, and that a young man when he enters a college within this Commonwealth, that the State recognizes as competent to train him to practice medicine, has the right to expect that the State will exercise adequate supervision over that college to make his diploma, *per se*, a sufficient guarantee of his professional training.

The further details as to the treatment of graduates from other States, reciprocity, preliminary requirements, etc., are quite capable of being made to harmoniously and satisfactorily adjust themselves to this system.

The recent legislative struggle but re-emphasizes the fact that the dominant school of medicine is more concerned in maintaining that domination than it is in the execution of those methods that will elevate the standards of professional attainments required for admission to the practice of medicine in this State; I believe the time is ripe for us to announce and to advance a policy of our own.

Our school of medicine was founded by a scholar, a product of the best training of the German universities, and the history of medical education in this country but reaffirms the consistent attitude which the Homœopathic branch of the medical profession has always held towards higher medical education. Its colleges were the first to make a uniform three years' course and its colleges were also the first to make a uniform four years' course of college training obligatory.

We have not, do not, or will not ask anything but the maintainance of the highest attainable standards to the admission to the medical profession. It entails no hardship upon our students, as the records show, but with every atom of our energy will we oppose any and every method of the dominant school that ignores the equal rights of our own, or that fails to recognize the fact that we are equally solicitous and responsible parties in the execution of the law.

The thanks of this Society are due to the Legislative Committee, and its indefatigable Chairman, for untiring efforts to safeguard the interests of our profession, and I am sure that all of us who have been active in the work most highly appreciate the noble response that the profession at large made through the entire State, for that was the line of battle with which the leaders carried the day.

Anent the subject of medical education, it might not be amiss to drop a word of protest against what has amounted to the practical abolishment of the old style of "Preceptorship." Do you think it wise? Is it any actual advancement or improvement? I question it, and I appeal to the practitioners here present, not to abrogate that duty and responsibility, even though the college may not exact it of the student; that personal contact between an experienced practitioner and the student, that frequent interchange of the newly formed ideas with the matured judgment, cannot but be mutually helpful; and the "Preceptor" only assumes the place that is rightfully his, of helping the college mould the aspirations and ideals of the student into a more effective professional character.

I think that some expression of opinion should be given by this Society as to the use of benzoate of soda as a food preservative; the matter has received such conspicuous attention in the public print, certain interests have been so untiring in their efforts to have the "Pure Food Laws" amended so as to permit its use, that the public has the right to expect some expression of opinion from those who are its advisors in matters of health.

It impresses me that the most that has been said by those who advocated its use was that it was a question of the lesser evil; and in the face of ample testimony from most reliable firms who are engaged in the preservation of food products, who state that healthy products may be preserved in good form without its use, in view of the findings and facts adduced by Dr. Wiley's experimentation, this Society could well support one of its members, Senator Daniel P. Gerberich, M. D., of Lebanon, who was one of the most conspicuous opponents of the Murphy bill, that permits its use.

The members of our profession should more actively interest themselves in the character of instruction that is received in our public schools upon medical matters. As a matter of fact, much is taught in needless detail, that even the teachers do not understand, an over-emphasis is given to certain subjects, and while endeavoring to point out the evils of intemperance; some of the statements are of such doubtful verity, that even the young mind appreciates their inaccuracy. Every experienced physician knows, with all the teachings upon medical matters that pupils now receive, they are most

lamentably ignorant about many of the facts that concern them most. Inquiries that are spontaneous, universal and natural, should be answered by the medical man in the plainest and least evasive terms; and the young should learn these facts in clean, helpful, intelligent manner from the physician, rather than have it left to a prurient imagination, the pernicious lies of quacks, or the baneful gossip of older children.

Whether we doctors accept it or evade it, the fact remains that we are in a large sense public educators, and should assume to the full extent all that tends to better and more healthful living.

The attention of the members is called to the "Hospital Exhibit," which is a new feature of this meeting. It is absolutely needless in a meeting of physicians to call attention to the role now played by the Hospital in our professional life; you know it as well as I do, and you know that the prestige and influence of our school, and its members in a given community is lessened when its medical rival has the exclusive control of the hospital.

It is a well known fact that most of the hospitals in this State are largely supported by State appropriations. We have no "State Religion" or "State Medicine" in this country, and in the hospital supported by the State we have an equal right and claim.

I appeal to those present from communities in which our school has no hospital facilities, to actively consider means and methods by which patients who prefer Homœopathic treatment in the wards of their local hospital may obtain it; and if they fail in that effort to endeavor to inaugurate the movement for a hospital of their own. In a community where a hospital is a necessity there exists the necessity of having Homœopathic treatment in it.

On motion, the address of the President was referred to a committee consisting of Drs. H. F. Heilner, J. H. Reading and H. M. Bunting, which later, presented the following:

REPORT OF THE COMMITTEE ON PRESIDENT'S ADDRESS.

Your committee submits the following report:

First—We agree with Dr. Maddux in defining our organization as a school of medicine and not a sectarian body.

Second—We protest to the Society against the bigoted and intolerant spirit exhibited by the officials of the University of Pennsylvania in its attitude towards our students.

Third—The recommendation of our President looking to the abolition of the medical examining board, to be replaced by proper and higher standards of education in our colleges, we heartily endorse, and respectfully call the attention of the Society to its further adoption.

Fourth—We sincerely approve Dr. Maddux's reference and approbation of the work of the Legislative Committee and its indefatigable Chairman and recommend that, if possible, sufficient increase in moneys to be turned over for its use as may be deemed necessary to carry on its work.

Fifth—The time-honored office of Preceptor to our medical students is upheld and advised by our President. We, the committee on his address, believe with him that it should not be abolished.

Sixth—We feel his point well taken in the matter of the Society taking official notice of the use of benzoate of soda and other pernicious fruit preservatives, and should place itself on record as officially advocating their entire abolition.

H. F. Heilner, M. D., Chairman.
J. H. Reading, M. D.
H. M. Bunting, M. D.

The Corresponding Secretary reported having received a communication from Dr. H. A. Roscoe, of Pittsburgh, presenting his resignation as a member of the Society. On motion, the resignation was accepted.

Also one from Dr. H. B. Coy, stating that he had removed from the State and tendering his resignation. This, too, was accepted, by vote of the Society.

George B. Moreland, M. D., Chairman, presented the following

REPORT OF THE COMMITTEE ON ORGANIZATION, REGISTRATION AND STATISTICS.

September 21, 1909.

To the Homœopathic Medical Society of the State of Pennsylvania:

Your Committee on Organization, Registration and Statistics

presents its annual report for publication. A list of the local societies and of the hospitals and dispensaries under our control is given, and a detailed statement of data obtainable concerning them is placed at your disposal.

We desire, through the medium of this report, to thank all who have answered our requests for information.

Respectfully submitted,

GEORGE B. MORELAND, Chairman.

HOMŒOPATHIC MEDICAL SOCIETIES

NAME	PRESIDENT.
Academy of Medicine.	G. Harlan Wells, M. D., 1631 Arch St., Philadelphia.
Alumni Association of Hahnemann Medical College of Philadelphia.	Francis W. Boyer, M. D., Pottsville.
A. R. Thomas Club of Philadelphia.	P. H. Ealer, M. D., 2027 Spring Garden St., Phila.
Blair County Homœopathic Medical Society.	Daniel Bohn, M. D., 1021 7th Ave., Altoona.
East End Doctors' Club	J. H. McClelland, M. D., Pittsburgh.
Germantown Homœopathic Medical Society.	
Hahnemann Club of Philadelphia.	J. E. James, M. D., 1521 Arch St., Philadelphia.
Homœopathic Medical Society of Allegheny County.	W. A. Stewart, M. D., Thomas Blvd. & Lang Ave., Pittsburgh.
Homœopathic Medical Society of Beaver County.	J. C. Gaston, M. D., Beaver Falls.
Homœopathic Medical Society of Berks County.	
Homœopathic Medical Society of Chester County.	S. A. Mullin, M. D., 29 S. High St., W. Chester.
Homœopathic Medical Society of Delaware County.	E. S. Clark, M. D., Media.
Homœopathic Medical Society of Delaware, Chester and Montgomery Counties.	Wm. D. Kennedy, M. D., Lansdowne.
Homœopathic Medical Society of Erie County.	A. Girard Cranch, M. D., 433 E. 6th St., Erie.
Homœopathic Medical Society of Lackawanna County.	H. F. Heilner, M. D., Scranton.
Homœopathic Medical Society of Lebanon County.	
Homœopathic Medical Society of Luzerne County.	W. F. Roth, M. D., Franklin St., Wilkes-Barre.
Homœopathic Medical Society of Montgomery County.	
Homœopathic Medical Society of Philadelphia County.	Thos. H. Carmichael, M. D. 7127 Germantown Ave., Phila.
Homœopathic Medical Society of Schuylkill County.	E. S. Klock, M. D., Orwigsburg.
Homœopathic Medical Society of the 23rd Ward, Philadelphia.	J. R. Bibighaus, M. D., Glenside.
Homœopathic Pharmaceutical Association of Pennsylvania.	
Lehigh Valley Homœopathic Medical Society.	
North Penn Medical Society.	S. C. Moyer, M. D., Lansdale.
Organon Medical Club of Chester.	R. P. Mercer, M. D., 223 W. 3rd St., Chester.
Oxford Medical Club of Philadelphia.	Desidirio Roman, M. D., 1429 Poplar St., Phila.

OF THE STATE OF PENNSYLVANIA.

SECRETARY.	Organized	Meetings.	Number of Members.	Dues.
Ralph Bernstein, M. D., 37 S. 19th St., Philadelphia.	1908	Monthly.	100	Assessment.
W. D. Carter, M. D., 1315 S. Broad St., Philadelphia.	1857	Yearly.	1861	
A. A. Norris, M. D., 4818 Chester Ave., Philadelphia.	1888	Monthly.	20	
H. B. Replogle, M. D., 6th Ave., Altoona.	1900	"	16	$1.00
C. I. Wendt, 600 Shady Ave., Pittsburgh.		"	20	1.00
Thomas S. Dunning, M. D., 1328 N. 15th St., Philadelphia.	1872	"	9	
H. S. Nicholson, M. D., Empire Bldg., Pittsburgh.	1864	"	106	2.00
Wm. D. Raymer, M. D., Beaver Falls.	1883	"	11	1 00
L. Hoopes, M. D., 15 S. Church St., W. Chester.	1898	Bi-Monthly.	19	1.00
Geo. C. Webster, M. D., 311 W. 7th St., Chester.	1898	Varies.	25	1.00
Isaac Crowther, M. D., Chester.	1858	Bi-Monthly.	76	1.00
Chas. A. McNiell, M. D., 137 E. 18th St., Erie.	1891	Monthly.	18	2.00
L. D. Roberts, M. D., Scranton.	1900	"	16	Assessment.
O. K. Grier, M. D., Main St., Wilkes Barre.	1899	"	17	
Percy A. Tindall, M. D., 1613 S. Broad St., Philadelphia.	1866	"	308	$1.00
A. H. Detweiler, M. D., Schuylkill Haven.	1883	Quarterly.	31	1.00
J. D. Boileau, M D., 804 W. Lehigh Ave., Philadelphia.	1881	Monthly.	30	1.00
D. M. Landis, M. D., Perkasie	1908	"	8	
D. P. Maddux, M. D., Chester	1887	"	6	Assessment.
Lewis B. Griffith, M. D., 2027 Columbia Ave., Philadelphia.	1885	"	17	$5.00

HOMŒOPATHIC MEDICAL SOCIETIES

NAME.	PRESIDENT.
Philadelphia Medical Club.	Clarence Bartlett, M. D., Spruce St., Philadelphia.
Philadelphia Society for Clinical Research.	Percy A. Tindall, M. D., 1613 S. Broad St., Philadelphia.
The Clinico-Pathologic Society of Philadelphia.	J. C. Guernsey, M. D., 1923 Chestnut St., Phila.
The D. P. Maddux Clinical Club, Chester.	J. R. T. Gray, M. D., Cambridge Bldg., Chester.
West Branch Homœopathic Medical Society.	A. E. Heimbach, M. D., Renovo.
Wm. B. Van Lennep Clinical Club.	
Women's Homœopathic Association of Pittsburg.	Millie J. Chapman, M. D., Spring Boro.
Women's Homœopathic Medical Club of Philadelphia.	Lydia Webster Stokes, M. D., Philadelphia.

OF THE STATE OF PENNSYLVANIA.

Secretary.	Organized	Meetings.	Number of Members.	Dues.
E. H. Van Deusen, M. D., Philadelphia.	1883	Monthly.	11	
J. T. Rowland, M. D., 430 N. 52nd St., Philadelphia.	1904	"	17	$6.00
Theodore J. Gramm, M. D., 846 N. Broad St., Philadelphia.	1894	"	93	2.00
R. C. Casselberry, M. D., Chester.	1901	Bi-Monthly.	7	
E. C. Blackburn, M. D., Williamsport.	1907	Alternate Months.	17	1.00
Ella D. Goff, M. D., Suite 3 Library Place, Allegheny.	1899	Monthly.	8	1.00
E. H. Howell, M. D., 254 S. 16th St., Philadelphia.	1884	"	15	1.00

HOMŒOPATHIC HOSPITALS

NAME.	LOCATION.	SECRETARY OR EXECUTIVE OFFICER.	Incorporated.	Opened to Patients.
Beaver Valley General Hospital.	New Brighton.	J. F. Merriman.	1895	1895
Children's Homœopathic Hospital.	Philadelphia.	W. Strong, M. D., Philadelphia.	1877	1877
Florence Crittendon Home and Rescue Association.	Pittsburgh.	D. C. Martin, D. D Pittsburgh.	1898	1893
Hahnemann Hospital.	Scranton.	Louise Tenney.	1907	1897
Hahnemann Medical College and Hospital.	Philadelphia.			
Homœopathic Medical and Surgical Hospital.	Reading.	T. A. Schollenberger, M. D.	1890	1891
Homœopathic Medical and Surgical Hospital.	Pittsburgh.	D. G. Stewart, Sec	1866	1866
J. Lewis Crozer Home for Incurables and Homœopathic Hospital.	Chester.	S. K. Ubil, Supt.	1897	1900
Medical, Surgical and Maternity Hospitals of the Women's Homœopathic Association of Pennsylvania.				
Pittsburg Sunshine Children's Home.	Pittsburgh.	Mrs. Robt. D. Coard, Pres.	1907	1906
St. Barnabas Free Home.	McKeesport.	G. P. Haner.	1900	1900
St. Luke's Homœopathic Hospital.				
West Philadelphia General Homœopathic Hospital and Dispensary.				
Women's Southern Homœopathic Hospital of Philadelphia.	Spruce St., Philadelphia	Mary Branson, M. D.	1896	1896

HOMŒOPATHIC DISPENSARIES

NAME.	SECRETARY.	LOCATION.
Children's Homœopathic Hospital Dispensary.	Walter Strong, M. D., Philadelphia.	Philadelphia.
Dispensary Women's Homœopathic Association of Pennsylvania.		
Eye and Ear Dispensary of the Pittsburgh Homœopathic Hospital.	H. B. Bryson, M. D.	Pittsburgh.
General Dispensary of the Pittsburgh Homœopathic Hospital.	C. I. Wendt, M. D.	Pittsburgh.
Hahnemann Medical College and Hospital Dispensary of Phila.		Philadelphia.
Hahnemann Hospital Dispensary.		Scranton.
Homœopathic Dispensary of Reading.	H. F. Schantz, M. D., Reading.	135 N. 6th St., Reading.
St. Luke's Homœopathic Hospital.		Philadelphia.
West Philadelphia Homœopathic Hospital and Dispensary.	Wm. M. Hillegas, M. D., 1001 Belmont Ave., Phila.	N. 54th St., Philadelphia.

OF THE STATE OF PENNSYLVANIA.

No. of Beds.	Treated Last Year.	Cured.	Relieved.	Not Relieved.	Died.	Estimated Value of Property and Grounds.	Source of Income
55	378	279	55	7	37	$ 50,000	Pay and Part Pay Patients and County of Beaver, Pa.
155	1184	681	252	16	173	260,000	Endowment, State aid Contributions
16	100				1 Baby	10,000	Contributions Solicited
72	809	584	142	23	46	150,000	State and Public Donations.
75	553	385	113	7	49	75,000	State Appropriations, Private Patients and Contributions.
250	8091	7783	141	18	149	1,000,000	State Aid, Board of Patients, Contributions
76	480						Endowment
31	365					40,000	Voluntary Contributions.
100						50,000	Voluntary Contributions
38	430	321	54	5	15	17,000	Donations, Board, and State of Penna

OF THE STATE OF PENNSYLVANIA.

Incorporated.	Opened.	No of New Patients Last Year.	Treated Last Year.	Prescriptions.	Visits. Out	Amt. of Funds belonging to Dispensary.
1877	1877	8,513	26,831	11,487	288	
1866	1866	1,802	4,609	4,434		
1866	1866	7,244	11,827	8,346		
1890	1887		3,498	8,842		
1905	1905 (Sept.)	1,133	10,059	10,059	none	

Dr. J. J. Tuller, Chairman, presented the following

REPORT OF THE COMMITTEE OF LEGISLATION.

Mr. President and members of the Homœopathic Medical Society of the State of Pennsylvania. Your committee on Legislation desires to submit the following report:

From the experience of your Committee with the Legislature of this State at its session held in 1907 and the subsequent results, severe as that battle was for the preservation of the rights of the Homœopathic School, an even greater struggle was anticipated before it at the opening of the Legislature in 1909. It therefore, thoroughly organized for the purpose of meeting the obligation which would certainly present itself. Your Chairman has requested the Secretary to give a resume of the meetings of the said Committee held during the years 1908 and 1909, that the report of the Chairman should not be too voluminous.

Your Committee met and organized early in the year 1908 and held successive meetings at frequent intervals until the close of the session of the Legislature in 1909.

On the first day of February, of the present year, Senator Herbst, of Berks County, himself a physician, introduced into the Senate the bill known as the Herbst Bill, number 40 of the Senate, providing for the establishment of a single board of medical examiners. At about the same time an identical bill was introduced in the House by Representative Shreve, of Erie County; this bill fortunately remaining inactive until the Senate had decided upon the Herbst Bill. These bills precipitated the battle.

It is necessary to go into a certain detail of the struggle which occurred during the following ten weeks.

Your Committee opposed (as it had been instructed to do by your honorable body) any measure before the Legislature that would establish a single board of medical examiners, which should deprive

the Homœopathic profession of an individual board and thereby of individual recognition before the laws of the State of Pennsylvania. The bill, as presented by Senator Herbst, provided that the representation on this board should be entirely at the discretion of the Governor of the State. Your Committee, feeling that primarily this bill established a single board of medical examiners, and secondarily, left to the discretion of an official of the State, the character of representation on that board, which would be, under the circumstances, subject to the prejudices and convictions of the official having such power, and therefore could not be depended upon to render justice to any one school, strenously antagonized the passage of this act.

As a result of this antagonism, a hearing was called by the Chairman of the Committee on Public Health and Sanitation of the Senate (to which committee this bill had been referred) on Tuesday, March 2nd, 1909. At this hearing, which was attended by between six and seven hundred physicians, representing all schools, but dominated by the so-called "Regular School," effort was made by that body to influence the Committee on Public Health and Sanitation to report favorably upon this bill. As the position then stood the Committee recognized the fact that there was a distinctly favorable feeling toward this bill in the Senate; that the political leaders of the State were decidedly favorable to it and that by understanding they were pledged to support the bill presented by the so-called "Regular School" of medicine. Your Committee, feeling, therefore, that they would be compelled (to preserve the equal recognition of Homœopathy, if not its individualization) to form some compact with the leaders of the old school and having the authority for this position granted them by this body, at its meeting in Harrisburg in 1908 empowering them to act according to the best judgment of your Legislative Committee in case of emergency, during the discussion at this hearing, met in secret conference with the representatives of the Legislative Committee of the Medical Society of the State of Pennsylvania, and, after a brief discussion, agreed upon a compromise which should give each of the three legalized schools of medicine, equal representation upon a board of medical examiners. Word was then sent out into the Senate Chamber and the public hearing was stopped.

A session of the Legislative Committees of the Medical Society of the State of Pennsylvania, the Homœopathic Medical Society of the State of Pennsylvania and the Eclectic Medical Society of the State of Pennsylvania, was then called; the representation of each of the other Committees numbering five and the Homœopathic Medical Society of Pennsylvania being represented by fourteen members of its Legislative Committee.

After long discussion actively participated in by the members of this conference, in which the term "Gentlemen's Agreement" was the most constant factor of the conference, the deliberation resulted in the representation of this board being placed as three members of of the so-called "Regular School," three of the Homœopathic School and two of the Eclectic School, thus establishing absolute harmony between the several schools legally represented in the State. The result of this agreement upon the conference was altogether remarkable. Harmony had been established and everything pointed to a rapid solution of the question.

At the reconvening of the Senate the following week, the Chairman of your Committee fearing that some accident to this agreement might occur, attended upon the Senate and late at night discovered an undercurrent of antagonism to the agreement. The bill at this time was before that body for second hearing and on the following day the force of the antagonism had spread throughout the Senate and the political influence brought to bear, by certain medical educational interests, in the State, had forced the determination on the part of the political leaders to alter this representation to five, two and one, giving the dominant school representation by five members on the board, the Homœopathic School two and the Eclectic School one. The struggle which followed to force this bill back into Committee where such a representation should not prevail, was a most intense, but ultimately successful one.

It is unnecessary to go into the description of the strenuous efforts on the part of the leaders to again force this bill out of Committee in this form, and it is also unnecessary to go into any detail, as it might be tiresome, but suffice it to say, that as a result of the vigorous efforts on the part of your Committee, a second hearing (at which about seven hundred opponents to the bill assembled) oc-

curred three weeks later in the Senate Chamber, on the 23rd day of March, at which hearing the Homœopathic School, the Eclectic School and other interests, opposed the position of monopoly that the dominant school had taken, and succeeded again in forcing amendments to this bill, and as a result, the bill was placed back in its original form, namely, the appointments to be made by the Governor.

Notwithstanding the fact that several prominent members of the old school, among others the President of the Medical Society of the State of Pennsylvania, had expressed a desire to be present and to be heard upon the question of the "Gentlemen's Agreement" which they had by this time completely shattered, none of these men were permitted by their own School to appear before this open meeting in defense of this dishonorable act. Your Committee worked so actively in its effort to oppose even this form of bill, that it was finally agreed upon that an amendment should again be introduced placing the representation on this board as three members from the Medical Society of the State of Pennsylvania, three from the Homœopathic Medical Society of the State of Pennsylvania, and two from the Eclectic Medical Society of the State of Pennsylvania.

By this time the session was so far advanced that the opportunity to press this bill finally through the Senate and the House of Representatives for approval, where it would be almost impossible to complete the work before the closing of the Legislature, was lost. Other interests before the Legislature were of such paramount importance that time could not be given up to further discussion of this bill, and in its miserable, dilapidated and useless state it was finally passed by the Senate on the 8th day of April and sent over to the House for approval. It was reported out of Committee to the House on Friday, April 9th, and passed its first reading on Tuesday, April 13th. This "hodge-podge" of medical legislation was withdrawn from the calendar of the House of Representatives by its sponsor, Mr. Shreve, on the 14th of April, thus closing the question of medical legislation before the session of 1909.

In the meantime, while both medical factors at work were very busy, the dominant school feeling such certainty that this bill would

successfully pass, in which case it would annul all medical legislation, did not oppose the Osteopathic bill which was going through ahead of this one, and it, therefore, passed both branches of the Legislature, was signed by the Governor and became a law. The Osteopaths today having individual recognition equal to any school of medicine in the State, with the exception of the restriction in the use of drugs and medicines and surgical work.

Again a bill had been introduced in the House known as the Thompson Bill, which provided for an amendment to the present medical law, which raised the standard of preliminary education to such a degree as to permit of reciprocity with other States. The law then as it stands today can be summed up in these few words, that it provides as heretofore for the three regularly legalized schools of medicine with their individual examining boards; that the present law is amended to provide for improved preliminary education; that the Osteopathic School is provided for by a law which gives them equal privileges with the regularly legalized schools of medicine.

This is the history of the biggest medical legislative battle that has been fought in this State and probably the greatest in the country. This then sums up the first part of the report of your Committee on Legislation and the Committee desires here to express its most grateful recognition of the loyalty of the profession generally and its gratitude to those members of the profession particularly who so quickly responded when the call came for help.

Dr. Tuller then asked that Dr. Augustus Korndœrfer, Sr., be accorded the privilege of presenting the report of a sub-committee of the Committee on Legislation, which was granted. Dr. Korndœrfer then read the following report, supplementing that of the full committee:

Since 1885 the Allopaths have through legislative measures sought to eliminate all other schools of medicine from State recognition, arrogating to themselves the exclusive right to regulate and control medical education and licensure within the Commonwealth.

Ridicule and vituperation having failed to destroy the power of Homœopathy, they directed their efforts to the securing of legislative restrictive powers; a course that presented a more promising field for the work of opposition.

History was but repeating itself; the early days of opposition were to be renewed. True, the repressive enactments had changed in form, but the spirit remained the same.

State control of licensure, through State boards constituted of Allopaths alone, was their ideal; and under the guise of protecting our citizens against incompetency and fraud, won many legislators. Not so, however, the thinkers; they searched deeper.

Knowing that ignorance is the twin brother of evil in every field of life, and believing that with an educated and enlightened profession the people would be better safeguarded, than would be possible under any merely restrictive post-graduate regulation of licensure, other methods were carefully studied and their effects duly considered. As a result of such effort the Committee on Legislation appointed by this Society in 1891 urged the importance of establishing a State Board of Medical Education and Licensure.

The opposition to this measure, in the dominant school, was so pronounced as to afford convincing proof that a higher standard of education was by no means the actuating motive in their desire for legislation.

We, in our college experience, had urgently felt the need for an extended course of study, and in fact had provided for the same through an optional three years' graded course.

Unfortunately, however, other medical colleges in this State failed, for a number of years, to lend their support to the measure.

With such a spirit of inaction on the part of the colleges, it became apparent that corrective legislation, to be effective, must be applied at the source of the student's training. To this end the State should hold supervision over the colleges. The sick sould be protected by thorough education of the physician. The student should be secured in his right to receive such thorough training that he be not subjected to the loss and discomfort, not to say disgrace, of rejection by the State, after the college has bestowed upon him the degree in medicine.

The medical college curriculum should be made to conform to the standard accepted by the State, which standard should in turn conform to that adopted by our national medical associations.

The college course should be conducted under sound pedagogic

methods and should meet every requirement of the general practitioner of medicine and surgery. Specialists' work being relegated to a post-graduate course.

Failing to secure such an educational system for Pennsylvania, we were compelled in order to secure legal recognition for our school, to throw our influence in favor of individual boards for each of the legally recognized schools of medicine.

Thus at least the integrity of our school might be maintained and our citizens secured in their right to personal liberty of choice in the selection of a medical attendant; and indirectly the standard of medical education might be improved.

Under the law of 1893 every interest appeared to be safeguarded, but the machinations of the evaders of law are many and their ways are devious. It was not long before new schools, so-called, were brought into being, each claiming State recognition upon standards of their own.

Soon many unlicensed practitioners were in the field, active, aggressive, and injurious. Thus had come to pass a condition not foreseen: a condition tending toward the defeat of our ideals—ideals to be found only in an educated and scientific profession; and, of our highest aim, the protection of the sick against ignorance and fraud.

The multiplicity of examining boards which inevitably will follow the multiplicity of schools, will necessarily tend toward a diversity of standards, which in turn will neutralize whatever of good the law otherwise might accomplish.

In fact, even now, with all the machinery for State control of medical licensure, we are in the anamolous position of having a variety of avenues leading to medical licensure, through a system of multiple boards and the resultant multiple standards; and even worse than this, while we have erected a barrier against the educated graduate in medicine until his qualifications have been critically tested and approved by the State, we signally fail to provide adequate check against the entrance of the uneducated charlatan, if he be shrewd enough to present himself under the cloak of a new system or school of healing—one not provided for under the existing multiple board method.

The question now arises: How may these incongruities be corrected without resultant injustice to the practitioners of any legalized school of medicine, and with assured protection to the community?

How better than by fostering, strengthening and guarding the very source from which should flow the knowledge essential to the qualified physician? The State now controls the preliminary and preparatory courses in our common and high schools, why not the medical course as given in our colleges?

Let the qualifications for licensure be the same for all prospective practitioners. Let the State determine upon the minimum standards throughout the entire course; supervise the examinations requisite to graduation and be responsible for the granting of the appropriate degree in every medical school chartered by the State; and require equal qualifications of those seeking entrance from colleges without the borders of the State.

Let the Board of Medical Education and Licensure be representative of every school of medicine. Representative in fact, not merely in name. Then will we have educated physicians who will be privileged to practice under such therapeutic methods as seem to them best.

A law compassing these points would meet every requirement of justice and equity.

With this thought in view, your Committee on Legislation appointed a sub-committee, of which I had the honor to be Chairman, with instruction to prepare a bill embracing the above suggested features, with the understanding that should the Legislature fail to sustain existing law, such a measure would afford the greatest opportunity for the untrammelled development of medicine from the standpoint of science.

The bill provides for the appointment of a board of nine members representing the legally incorporated State medical societies; provides against majority representation; regulates the preliminary, preparatory and medical curriculum, the length of the course of study, the final examinations, graduation and licensure.

A copy of the bill is herewith submitted.

AN ACT

To define the practice of medicine, to establish a State Department of Medical Education and Licensure, to define the powers and duties of said department, and to make an appropriation therefor.

Whereas: The safety of the citizens of this Commonwealth is endangered by incompetent physicians and surgeons, and a due regard for public health and the preservation of human life demands that none but competent and properly qualified physicians and surgeons shall be permitted to practice their profession.

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, that the practice of medicine within the meaning of this Act is the exercise or performance of an act by or through the use of anything or matter or by things done, given or applied, whether with or without the use of drugs or medicine, and whether with or without fee therefor, by a person holding himself or herself out as able to cure disease, with a view to relieve, heal or cure, and having for its object the prevention, healing, remedying, cure and alleviation of disease.

Section 2. Further it is enacted by the authority of the same that there shall be established a State Department of Medical Education and Licensure under the control of a board of nine members; each of said members shall serve for a term of six years from the first day of March next after his appointment, with the exception of those first appointed who shall serve as follows: Three for two years, three for four years and three for six years from the first day of March, Anno Domini one thousand nine hundred and ten.

The Governor shall appoint the members of said Department of Medical Education and Licensure from full lists of the members of the legally incorporated State Medical Societies of the State of Pennsylvania, provided that at no time shall a majority of said members represent any one school of medicine or system of medical practice.

Each of said appointees must be a registered physician in good

standing and shall have practiced medicine or surgery under the laws of this Commonwealth and in accordance with the tenets of the school which he shall represent for a period of not less than ten years prior to such appointment and shall not be a member of the faculty or teaching corps of a medical college.

The Governor shall fill vacancies by death or otherwise for the unexpired terms of said members and may remove any member for continued neglect of the duties required by this Act or on recommendation of the medical society with which said member may be in affiliation for unprofessional or dishonorable conduct.

The Governor shall in his first appointments designate the number of years for which each member shall serve. The appointment of successors to those members whose term of office will expire on the first day of March of any year shall be made by the Governor during the month of January of such years upon the same conditions and requirements as hereinbefore specified with reference to the appointments of members.

Each of said appointees shall receive a certificate of appointment from the Secretary of the Commonwealth.

Section 3. The said Department shall be known by the name and style of the State Department of Medical Education and Licensure of the Commonwealth of Pennsylvania and shall have a common seal and may make and adopt all necessary rules, regulations and by-laws not inconsistent with the constitution and laws of this Commonwealth or of the United States, whereby to perform the duties and transact the business required under the provisions of this Act and shall have power to locate and maintain an office for the transaction of business.

The members of the said Department of Medical Education and Licensure shall be authorized and empowered to take testimony concerning all matters within the jurisdiction of said Department at any regular meeting or at special meetings called for the purpose and its presiding officer may issue subpoenas and administer oaths to witnesses.

Five members shall constitute a quorum.

Section 4. The members of said Department shall hold at least two stated meetings each year at Harrisburg and may hold special

meetings at such times and places as they may deem proper. The first meeting shall be held on the first Tuesday of April, Anno Domini one thousand nine hundred and ten, suitable notice in the usual form being given with the notice of their appointment by the Secretary of the Commonwealth to each of the members thereof specifying the time and place of meeting.

At this first meeting, and annually thereafter, an organization shall be effected by the election of a president and a secretary who shall also act as treasurer; provided that the president and secretary shall not be of the same school of medicine.

Section 5. It shall be the duty of said Department of Medical Education and Licensure to define and limit the minimum preliminary and preparatory educational requirements for entrance upon the collegiate course in medicine; provided that such minimum requirements shall not be less than the equal of a four years' high school course of study as maintained in this Commonwealth.

Any change in the standard of the preliminary or preparatory educational requirements must be published by the Department not less than one year prior to going into effect. Printed notice of such change shall at the same time be sent to the dean and registrar or secretary of each medical college within the Commonwealth.

Section 6. It shall also be the duty of said Department of Medical Education and Licensure to determine the minimum standard of the medical curriculum, the length of the course of study and the character and extent of the examination requisite to the degree in medicine, and these requirements shall be the same for each of the medical colleges within the Commonwealth; provided that said course in medicine shall embrace not less than four thousand five hundred hours of actual work in didactic, laboratory and clinical studies, including anatomy, normal and morbid histology, physiology, chemistry, sanitation and hygiene, general and special pathology, bacteriology, practice of medicine, materia medica, toxicology, surgery, obstetrics, gynæcology and medical jurisprudence; and further provided that the said course in medicine shall have been pursued in a reputable college or colleges during at least four sessions of not less than eight months each in four different calendar years.

Section 7. Two or more of the members of the said Department shall be delegated as a Committee, whose duty shall be to inspect the various medical educational institutions chartered under the laws of this Commonwealth, ascertain the extent of the curriculum and the facilities possessed by each such institutions for the thorough teaching of the various departments of medicine in accordance with the requirements of this Act and make report of the same at each regular meeting as provided in Section 3 of this Act.

Any medical institution chartered by this Commonwealth and empowered to confer the degree in medicine that shall maintain a lower standard than that required under the provisions of this Act shall be duly notified of the same in writing, signed by the Secretary of the Department. Failure to conform to the authorized standard after such notification shall render ineligible for licensure in this Commonwealth all graduates of such institutions until such time as the curriculum and course be made to conform to the standard adopted and duly published as hereinbefore provided.

Section 8. Graduates in medicine of accredited medical colleges of this Commonwealth on the payment of a fee of twenty-five dollars to the Treasurer of the Department of Medical Education and Licensure together with the presentation of proof that the applicant is more than twenty-one years of age, of good moral character and has fulfilled the preliminary, preparatory and medical educational requirements of this Act shall receive under the seal of this Department a license to practice medicine and surgery or any of their branches within this Commonwealth; provided such application be made within one year of the date of such graduation and said license shall entitle the recipient to register as a practitioner of medicine and surgery or any of their branches in any county of this State.

Unlicensed graduates of accredited medical colleges of other states or countries wherein the entrance requirements and the medical standards are substantially the equal of those specified under the provisions of this Act who desire to practice medicine and surgery or any of their branches within this Commonwealth shall be required to pass a satisfactory examination before the Board representing this Department.

For the purpose of examining applicants the Department of Medical Education and Licensure shall hold two or more stated or special meetings in each year, due notice of which shall be made public at such times and places as the Board shall determine.

The said examinations shall be conducted in writing in accordance with the rules and regulations of this Department and shall embrace the subjects specified in Section 6 of this Act. The questions in materia medica and therapeutics shall be in accordance with the school elected by the candidate. Such written examinations may at the discretion of the Board be supplemented by practical tests at the bedside in available hospitals or other eleemosynary institutions.

After each such examination the Board shall without unnecessary delay act upon the same and in the name of the Department of Medical Education and Licensure issue forthwith to each applicant who shall have attained a general average of not less than seventy-five per centum and therefore been adjudged as qualified for the practice of medicine, a license to practice medicine and surgery or any of their branches within this Commonwealth.

Every license issued pursuant to this Act shall be subscribed by the officers and members of the Department of Medical Education and Licensure. It shall also have affixed to it by the person authorized to affix the same the seal of the Department of Medical Education and Licensure.

Before the said license shall be issued it shall be recorded in a book kept for this purpose in the office of the Department of Medical Education and Licensure, and the number and page therein containing said recorded copy shall be noted upon the face of the said license. The said records shall be open to public inspection under proper restrictions as to their safe keeping and in all legal proceedings shall have the same weight as evidence that is given to the conveyance of land.

All examination papers and records shall be kept for reference and inspection for a period of not less than five years.

In the case of failure at any such examination the candidate after the expiration of six months and within two years shall have the privilege of a second examination without the payment of an additional fee.

Applicants examined and licensed by State Boards of Medical Examiners or State Boards of Health of other states on the payment of a fee of twenty-five dollars to the secretary of the Department of Medical Education and Licensure and filing in the office of the said Department a copy of said license certified by affidavit of the president and secretary of such State Board of Medical Examiners or State Board of Health with proof that the educational standard adopted by the said board and in force at the time of issuance of the said license was substantially the same as to preliminary, preparatory and medical requirements as provided in this Act, shall receive a certificate of Licensure without further examination before the Board representing this Department.

Licensed graduates of other states, of more than five years' standing who may desire to practice medicine and surgery or any of their branches in this State may be admitted to the examination before the Department of Medical Education and Licensure on the payment of a fee of twenty-five dollars to the Treasurer of the said Department and filing in the office of the said Department a copy of the said license, certified by the president and secretary of the State Board of Medical Examiners or State Board of Health, issuing the same with proof that the educational standards in force at the time of issuance of the said license were the same as pertained in this State at the corresponding time, whereupon each such applicant shall receive a permit admitting him to the next regular examination.

Section 9. All license fees collected under this Act shall be paid into the Treasury of the State within ten days after being received by the Treasurer of the Department of Medical Education and Licensure.

All expenses incurred in conducting the business of the said Department of Medical Education and Licensure shall be paid out of the treasury of the State upon filling properly itemized vouchers with the Auditor General of this Commonwealth.

Each member of the said Department shall be reimbursed for his traveling expenses incurred while engaged in his official duties upon filing a list of said expenses with the Auditor General of this Commonwealth and shall further receive compensation by a

per diem fee of twenty-five dollars, but not to exceed forty days in any one year.

Section 10. On and after the first day of March, Anno Domini one thousand nine hundred and ten, no person shall enter upon the practice of medicine and surgery or any of their branches, nor shall they employ mental, mechanical or any other form of non-medicinal treatment of diseases, deformity or injury unless he or she shall have complied with the provisions of this Act and shall have exhibited to the prothonotary of the Court of Common Pleas of the county in which he or she desires to practice medicine or surgery or treat those suffering from disease, deformity or injury, a certificate of licensure duly granted as hereinbefore provided, whereupon he or she shall be entitled upon the payment of one dollar, to be duly registered in the office of the prothonotary of the Court of Common Pleas in the said county, and any person violating any of the provisions of this Act shall be deemed guilty of a misdemeanor and upon conviction thereof in the Court of Quarter Sessions of the county wherein the offense shall have been committed, shall pay a fine of not more than five hundred dollars for each offense or undergo an imprisonment for——months or both.

Section 11. Nothing in this Act shall be construed to interfere with or punish commissioned medical officers serving in the army or navy of the United States or in the United States Marine Hospital Service while so commissioned, or any one while actually serving as a member of the resident medical staff of any legally incorporated hospital or any legally qualified and registered dentist exclusively engaged in the practice of dentistry, or interfere with the manufacturers of artificial eyes, limbs, or orthopedical instruments or trusses of any kind for fitting such instruments on persons in need thereof; or any lawfully qualified physicians and surgeons residing in other states or counties meeting registered physicians of this State in consultation or any physician or surgeon residing on the border of a neighboring state and duly authorized under the laws thereof to practice medicine and surgery therein, whose practice extends into the limits of this State, provided that such practitioners shall not open an office or appoint a place to meet

patients or receive calls within the limits of Pennsylvania, or physicians duly registered in one county of this State called to attend isolated cases in another county, but not residing or habitually practicing therein. And nothing in this Act shall be construed to prohibit the practice of medicine and surgery within this Commonwealth by any practitioner who shall have been duly registered before the first day of March, Anno Domini one thousand nine hundred and ten, according to the terms of the Act entitled "An Act to Establish a Medical Council and Three State Boards of Medical Examiners to define the powers and duties of said Medical Council and said State Boards of Medical Examiners to provide for the examination and licensing of practitioners of medicine and surgery to further regulate the practice of medicine and surgery and to make an appropriation for the Medical Council"—approved the eighteenth day of May, Anno Domini one thousand eight hundred and ninety three, and one such registry shall be sufficient to warrant to practice medicine and surgery in any county of this Commonwealth.

Nor shall anything in this Act be construed to prohibit any graduate of a legally incorporated institution chartered for the purpose of teaching any form of non-medicinal therapeutics who has received a diploma or certificate of proficiency from said institution and who is practicing his or her profession in this Commonwealth at the time of the passage of this Act from continuing in such practice; provided he or she shall within thirty days subsequent to the passage of this Act exhibit such diploma or certificate and file a copy of the same in the office of the prothonotary of the Court of Common Pleas of the county wherein he or she is practicing, whereupon he or she upon the payment of one dollar shall be entitled to be duly registered as provided in Section 10 of this Act.

Section 12. On and after the first day of January, Anno Domini, one thousand nine hundred and ten, the Department of Medical Education and Licensure shall refuse to grant a license to an applicant to practice medicine upon the presentation to said Department of Medical Education and Licensure of a court record showing the conviction in due course of law of said person for producing

or aiding or abetting in producing a criminal abortion or miscarriage by any means whatsoever. The Department of Medical Education and Licensure upon such evidence and proof, shall cause the name of such convicted person, if a licentiate, to be removed from the record in the office of any prothonotary in this State.

The Department of Medical Education and Licensure may refuse, revoke or suspend the right to practice medicine in this State for any or all of the following reasons, to wit: the conviction of a crime involving moral turpitude, habitual intemperance in the use of ardent spirits or stimulants, narcotics or any other substance which impairs intellect and judgment to such an extent as to incapacitate for the performance of professional duties.

Any person who is a licentiate under this Act, or who is an applicant for examination for licensure to practice medicine in this State, against whom are preferred any of the foregoing charges for causing the revocation or suspension of license, or for causing refusal of the right to be examined for licensure, shall be furnished by the Department of Medical Education and Licensure with a copy of the complaint and shall have a hearing before the Board representing said Department or by attorney and witnesses may be examined by said Board respecting the guilt or innocence of said accused. The suspension of license of any licentiate under this Act shall be removed when said narcotic or vicious habit hereinbefore specified shall have been adjudged by the said Board to be cured or overcome and said suspended licentiate deemed again capable of practicing his or her profession.

Section 13. The sum of two thousand dollars is hereby appropriated out of any moneys in the State treasury not otherwise appropriated for the necessary expenses of the Department of Medical Education and Licensure in installing the work of the said Department, one thousand dollars for the year beginning January first, Anno Domini, one thousand nine hundred and nine, and one thousand dollars for the year beginning January first, Anno Domini, one thousand nine hundred and ten. Any balance remaining at the expiration of this period shall be paid into the Treasury of the Commonwealth.

Section 14. All acts and parts of acts of Assembly inconsistent herewith shall be and are hereby repealed.

Dr. Tuller then asked that the Society hear a report concerning the Homœopathic State Hospital for the Insane. The society agreeing to having the report presented, Dr. Tuller read the following:

REPORT ON THE HOMŒOPATHIC STATE HOSPITAL FOR THE INSANE.

By an act passed by the legislature of the State of Pennsylvania, at its session of 1901 and approved in part by the Governor of this State, July 18th, 1901, a commission was created to erect a state hospital, for the insane, to be known as The Homœopathic Hospital for the Insane and by virtue of this act to be placed under Homœopathic management. (Section 7, Act 437, Session 1901.)

The said commission was provided for as follows: "That the Governor shall appoint three persons, the President pro tempore of the Senate, W. P. Snyder, shall appoint one member of the present Senate and the Speaker of the House of Representatives, shall appoint one member of the present House, who together with the president pro tempore of the Senate W. P. Snyder, and the present Speaker of the House of Representatives, W. T. Marshall, shall constitute a commission who shall serve without compensation to select a site and build a hospital to be conducted under Homœopathic management for the care and treatment of the insane of the following counties to wit: Bradford, Bucks, Carbon, Lackawanna, Lehigh, Monroe, Northampton, Pike, Sullivan, Susquehanna, Wayne and Wyoming and of such other insane patients as are hereinafter specified." (Act 437, Section 1.)

"Whenever the said hospital shall have sufficient accommodations for the proper care of a larger number of patients than shall be committed to it from the districts above mentioned, the committee on Lunacy of the State Board of Charities shall have authority to transfer to said hospital patients from any other state hospital for the insane or to authorize the commitment to said hospital of patients from any other part of the State, giving preference in all cases to those whose family or friends desire them to receive Homœopathic treatment." (Act 437, Sec. 11.)

"The plans of the said hospital shall be prepared by the said

commissioners and approved by the Board of Public Charities." (Act 437, Section 4.)

To enable the commissioners to purchase the land and commence the erection of said building, the sum of 300,000 dollars or so much thereof as may be necessary, is hereby specifically appropriated." (Act 437, Section 5.) (This sum was reduced to $50,000 by the Governor. J. J. T.)

The said commissioners, upon the completion of said hospital, shall surrender their trust to the Board of Trustees." (Act 437, Section 7.)

The original commission consisted of W. T. Marshall, Wm. P. Snyder, Wm. H. Keyser, Louis H. Willard, I. W. Heysinger and F. T. L. Keiter. This commission met and organized with W. T. Marshall as Chairman, F. T. L. Keiter as Secretary, and W. H. Keyser as Treasurer. They immediately commenced the work of securing the site, which was selected in the town of Rittersville, about two miles east of Allentown on the Allentown and Bethlehem Pike. There probably is not in Western Pennsylvania a more perfect or beautiful location for such an institution than the one selected by this commission, the purchase price of which, insuring titles, etc., was $37,712.30. Beyond the drafting of the plans and the surveying of the property nothing further could be done until after the action of the legislature at its session in 1903, when the purchase of the commission should be approved by that body and a further appropriation be granted for the beginning of the erection of buildings. The plans, in the meantime, had been drawn, and the calculated cost of these buildings according to the instruction given to the architect, was about $2,000,000. The plans were approved by the Board of Charities. You will note that the act provides that the plans once having been adopted by the Board of Charities, "shall not be changed."

The next appropriation request by the commission was $350,000 to start the work. This bill was passed by the legislature, but was cut by the Governor to $300,000. According to the plans submitted the commission commenced the erection of the Administration Building, after having duly advertised, and granted the permit to the lowest bidder, the cost of which was $284,489.40. This includes

contract No. 1, including buildings A, B, C, in the diagrams submitted. These buildings were immediately completed in accordance with the terms of the contracts.

The commission having completed all the work that the money would permit, their appropriation having been but $300,000 in the year 1903, went before the legislature of 1905 with a request for $900,000. Both branches of the legislature granted this request, but the Governor again reduced the amount appropriated to $500,000. The architect was instructed to prepare plans to further the progress of the work. For the necessary grading, the erection of the power-house, with its furnishings of engines, two boilers and pumps and connections, foundations for kitchen, cold-storage buildings, corridors, tunnels and conduits, and of the dining-room building and connecting corridors, chapel buildings, connecting corridors E and F to first floor levels, and the foundations to all other buildings to ground level, including ward buildings L, M, N and O and corridors P and Q. This contract necessitated the expenditure of $447,668.43.

This forced the arrest of the work until after the meeting of the legislature of 1907. At this session of the legislature the Commission requested an appropriation of $975,000. The amount received was $450,000. Again the architect was directed to arrange the plans and the contracts were let to the lowest bidder. This contract called for the erection of the dining-room building, the laundry building completed with necessary equipment, the completion of corridors F and K, the completion of the kitchen building with equipment, storage building with equipment, and the addition of two boilers. This contract was awarded at $344,780. It was necessary under the Act, April 22nd, 1905, to construct a sewage disposal plant such as was provided for by the rules and regulations of the State Department of Health. A contract was therefore let after proper bids had been offered for $39,516 to cover this work.

Another contract was entered into for the erection of ward building M for the amount of $153,600. This building was erected, but could not be completed internally because of lack of funds.

The Commission again requested of the legislature to grant them an appropriation of $875,000 to complete the entire work, which

was given it by the legislature. But the Governor again reduced the amount to $400,000. The Commission has entered into a contract to complete the external structural portion of all the balance of the buildings, included in the original plan, at a cost of about $340,000. It will be seen that again it will be impossible to complete this building, as there will be insufficient funds for the finishing of the internal structure. It will probably require about $300,000 to complete the internal finishings of ward buildings L, M, N and O. Thus you will see that the actual construction of these buildings will come fairly well within the calculated cost and that the cause of the delay in their completion, has been due to the lack of funds appropriated by the several legislatures.

It is a fact well known to those that have any connections with building operations that piece-meal construction is invariably an extravagant means of erecting a building. That this institution could have been completed at a decidedly lower figure, had the money been available for the Commission to continuously progress with its work. Again as the buildings were erected and accepted by the Commission, it became necessary to protect and care for them, as they were turned over by the contractor. It, of course, was necessary to employ a small army of men to protect the buildings and their internal mechanism from thieves and tramps, etc., not only during the operations that were going on, but during the interval, while the work was at a standstill. Inspectors, superintendents, etc. were a constant necessity at all times. Some idea of this expense of these employes can be gained when it is understood that at the most reasonable figures at which responsible men in their different positions could be obtained up to July 31st, 1908, the cost of the superintendents, engineers, watchmen, caretakers, etc., was nearly $27,000. That to the same date, the special superintendent of construction appointed by the state "Board of Grounds and Buildings" was upward of $4,000, and I am extremely pleased to say that, the personal expense of the Commission to this date including all traveling expenses, meals and special expenses to the same date was only $1,243.10.

In addition to what has already been constructed, the Commission has secured an abundant supply of water by means of artesian wells,

which have proven to be successful, for they will furnish abundance of clean, pure, fresh water, which rendered the institution absolutely independent of any necessity for the demand upon the surface supply with all its possible contaminations.

During the life time of Dr. Louis H. Willard, of Allegheny, one of our most reputable practitioners, in his association with the members of the Commission, he made an earnest appeal that the foundation structure of the entire system of buildings should be completed to insure the ultimate finishing of the institution. This has proven to be a mark of great foresight on his part and will be a great advantage to our branch of the profession in compelling the completion of these buildings, which might otherwise drag along interminably without our having the advantage of what the legislature of the State primarily intended should be ours by right. Again the Commission recognizes the fact that it had a structure to erect that would cost about $2,000,000 and a structure that would hold in a most comfortable fashion at the very lowest estimate, 1,500 patients and which could, without overcrowding, support 1,800 and, therefore, it likewise realized that the entire mechanism to the capacity of 1,800 patients must be erected and that should it build this structure in this way and subsequently permit the completion of sufficient ward space only to maintain 500 or 600 patients, that the institution would be compelled to support a mechanism capable of caring for possibly 1,800 patients to maintain an institution for 600. It takes but little calculation to see that under such circumstances, the most gross extravagance and incompetency would be charged against the management of this institution as soon as its doors were opened and its reports came before the public. The Commission has therefore, decided to complete the external structure of the remainder of these buildings, before any portion of them can be opened to the reception of patients.

At the legislative session of 1907, bills were introduced, passed and signed by the Governor appropriating about $850,000 for the building of new additions to both the Norristown institution for the insane and the one out at Danville, and if that money had been given to the Commission erecting the institution at Allentown, both the hospitals at Norristown and Danville would have needed no

addition, because the one at Allentown would have taken over four hundred patients from each of the hospitals, thus relieving this over-crowding entirely.

Dr. J. H. McClelland then offered the following resolution which was, on motion, adopted:

Resolved: That this Society, in accepting the report of the Committee on Legislation, emphatically endorses the policy and appreciates the achievements of the Committee and offers its most cordial thanks, especially to its Chairman for his herculean labors in behalf of our school and in the interest of the people of the Commonwealth.

Resolved: That this Society endorses the plan of future legislation submitted by the sub-committee of the Committee on Legislation; also

Resolved: That this Society cordially endorses the work of the Commission created to erect a Homœopathic insane hospital and their plans for completing the same as submitted by Commissioner Tuller.

REPORT OF THE COMMITTEE TO ENCOURAGE THE STUDY OF HOMŒOPATHY.

Your committee begs leave to report progress at this time. One reason for this has been that our National body, the American Institute of Homœopathy, has taken up this work in a systematic way and, until it works out its plans, it is a little difficult to adjust our procedure. This, however, does not excuse us from doing our share in extending our borders by increasing the number of qualified practitioners of our school.

In a general way your Committee recommends that a fund be created to which the treasury of this society should contribute liberally, according to its ability. From this fund a sufficient amount should be drawn from time to time to pay the tuition of well qualified students for a full course in our (Hahnemann,) medical college. The fund proposed should be increased by the earnest support of every Homœopathic physician in the State.

At a future time the Committee hopes to show some definite progress.

Respectfully submitted,
J. H. McClelland, M. D., Chairman.

Dr. Emma T. Schreiner, Chairman, reported the following resolutions as the

REPORT OF THE COMMITTEE FOR COMBATING THE SOCIAL EVIL.

First—It shall be the duty of the physician attending a venereal case, either to isolate the case or to inform those exposed to contagion, of the nature of the disease.

Second—It shall be the duty of the physician to impress upon patients the gravity of these diseases, the necessity for the same moral standard for men and women, and the great benefits derived from moral living.

Third—We advocate teaching the whole of human anatomy and physiology in simple form to young children.

On motion, the resolutions were adopted.

REPORT OF THE NECROLOGIST.

Mr. President and Fellow Members: The forty-sixth session of this society brings us together in deliberation and it is becoming for us at the beginning of the session to go over our numbers and recount, noting the missing in a tribute of permanent record. It is true that yearly we may expect to fulfill this duty, yet what a pleasure it is to recall the years of active service these men have seen in our ranks. To know that the principles they have stood for, we, too, are fighting for, and while they rest from their labors and have received their reward we must go on. Surely this should be an incentive to work and labor. And when it comes our turn it may be said of us that we were

"A combination and the forms indeed,
Whereupon God did seem to set his seal,
To give the world assurance of men."

DR. BETTS.

Suddenly on January 16, 1909, B. Frank Betts, M. D., aged 63 years.

Dr. Betts was found dead in his bed at his late residence, 1609 Girard Avenue, Philadelphia, Pa., on the morning of January 16th, 1909. He was President of the Children's Homœopathic Hospital of Philadelphia, President of the Nurses' committee of the Hahnemann Hospital, Philadelphia, Pa., and a active senior member of our Society. With the exception of Dr. John E. Evans, Sr., Dr. Betts was the last survivor of the "Old Guard."

Dr. Betts was for a long time Professor of Gynæcology in Hahnemann Hospital and College of Philadelphia.

Much of his time was taken up in later years in his endeavors to advance education among nurses and in the establishment of Training Schools.

DR. VANROOM R. TINDALL.

On January 5th, 1909, Dr. Vanroom R. Tindall, aged 70. Dr. Tindall died at the Hahnemann Hospital and was buried from his late residence, 1613 South Broad Street, Philadelphia, Pa.

He was the last surviving member of the class of 1864 of the Hahnemann College. He is survived by a widow, three sons and one daughter.

Dr. Tindall was for years an active worker in our State Society.

Dr. George C. Haller, of 4564 Wayne Avenue, died September 7th, 1909, in the Hahnemann Hospital, following an operation for appendicitis.

Dr. Haller, who was thirty-seven years old, was married seven months ago to Miss Harriet H. Brennan, of Wilkes-Barre. He was graduated from the Hahnemann Medical College in 1807 and for a year and a half following his graduation was a resident physician at the Metropolitan Hospital in New York. He then came to Philadelphia where he established a practice in Germantown. He was a member of the Harmony Lodge, No. 52, F. and A. M., and Columbia Chapter, No. 91, R. A. M.

Dr. W. J. Martin, November 17th, 1908.

Dr. Samuel Plush, May 4, 1909, residing at 310 South Tenth Street, Philadelphia, Pa.

Dr. Howard Cheyney, March 5, 1909, Williamsport, Pa.

DR. E. R. SNADER.

Dr. E. R. Snader was crushed to death January 4th, 1909, beneath his motor car, which went over an embankment in Fairmount Park.

Dr. Snader was professor of the practice of medicine at Hahnemann College since September, 1907. He was born in Millport, Lancaster County, Pa., on January 16, 1855. For a while he worked in various positions on the Lancaster Inquirer and Enterprise. He was graduated from the Hahnemann College in 1884. Later he served for two years as resident physician at the Hahnemann Hospital and then became chief of the dispensary staff. In 1886 he was made professor of physical diagnosis, and two years later became clinical chief. He served here until he was made professor of the practice of medicine.

Dr. T. M. Johnson was appointed to act as Censor *pro tem.*

At the last meeting of the Society the following amendment to the By-Laws was duly proposed:

Amend Article V, Section 7, by striking out all of the section following the words "make a report at the annual session of the Society" and insert "the Trustees shall have power to draw upon the treasury for any legitimate expenses of the Board, or to meet any extraordinary expense deemed necessary by a majority vote of the Board, and such moneys shall only be paid upon a written order on the Treasurer of the Society, signed by the Chairman and Secretary of the Board of Trustees," so that the section shall read:

Section 7. "The Trustees shall have general supervision of the business of the Society, hold at least one meeting every year, and make a report at the annual session of the Society. The Trustees shall have power to draw upon the treasury for any legitimate expenses of the Board or to meet any extraordinary expense deemed necessary by a majority vote of the Board, and such moneys shall only be paid upon a written order on the Treasurer of the Society, signed by the Chairman and Secretary of the Board of Trustees.

"The Trustees, acting as the Judicial Council, shall take cognizance of and decide upon all questions of an ethical or judicial

character. All questions of a personal character shall be referred at once, without discussion, to the Judicial Council. Every decision of the Council shall be in writing, signed by a majority of the members present, be reported to this Society at the earliest practical moment, and shall be final. The Council shall preserve permanent records of all its proceedings."

On motion, the amendment was adopted by a unanimous vote.

TREASURER'S REPORT.

Annual Report of Ella D. Goff, Treasurer, for the fiscal year ending September 20, 1909.

DR.

1908.	Sept. 29,	To balance	$1,135.02	
1909.	Sept. 20,	To annual dues collected	1,296.00	
		To amount returned by Committee of Arrangements, 1908	80.31	
		To amount realized from sale of old "Transactions"	3.00	
				$2,514.33
1909.	May 4,	To amount collected by Legislative Committee		419.00
				$2,933.33

CR.

1908.	Sept. 21.	By Order No. 83, to H. F. Schantz, for Committee of Arrangements	200.00
	23.	By Order No. 84, to E. H. Pond, for Supplies and Traveling Expenses	51.00
	23.	By Order No. 85, to E. M. Gramm, for Printing, Postage, Stenographer, Traveling Expenses, etc.	167.80
	23.	By the "Examiner," printing (No. 86)	30.15

	23.	By Order No. 87, to George B. Moreland, for Record Book and Printing.....	13.75
	23.	By Order No. 88, to R. L. Polk, Directory	6.00
	23.	By Order No. 89, to Vanfleet & Co., for Envelopes and Printing	5.25
	25.	By Order No. 90, to Ella D. Goff, for Envelopes, Printing and Traveling Expenses	75.74
	25.	By Order No. 91, to W. F. Edmundson, for Mailing Circulars	4.20
	25.	By Order No. 92, to W. F. Edmundson, for Printing Circulars, etc.	21.50
Oct.	15.	By Order No. 93, to J. McEldowney, for Shorthand Reporting	100.00
1909. April	24.	By Order No. 94, to "Examiner," for Printing and Mailing "Transactions"	737.59
1908. Aug.	10.	By Order No. 95, to Membership Committee	100.00
1909. Feb.	18.	By Order No. 96, to Legislative Committee	300.00
1909. May	21.	By Order No. 97, to Legislative Committee	419.00
			$2,231.98

Sept. 20. To balance .....$ 701.35

Respectfully submitted,

ELLA D. GOFF, M. D.

REPORT OF THE BOARD OF CENSORS.

The Censors reported having examined into the qualifications of the following applicants for Active Membership and recommended that they be elected. They were, on motion, elected:

Stanley Barratt, M. D., Scranton.

Othmar F. Barthmaier, M. D., 2731 N. Fifth Street, Philadelphia.

Frank C. Benson, M. D., 1831 Chestnut Street, Philadelphia.

J. A. Brooke, M. D., Wilkes-Barre.

John P. Craig, M. D., Chester.

Mark H. Cornish, M. D., Sharon Hill.

E. P. Cuthbert, M. D., Evans City.

Edward H. Doan, M. D., Newtown.

W. DeHaven Eaches, M. D., Phœnixville.

W. F. Ely, M. D., Lansford.

R. R. Ewing, M. D., New Sheffield.

David E. Fitz-Gerald, M. D., 3468 Frankford Avenue, Philadelphia.

J. R. T. Gray, Jr., M. D., Chester.

Henry L Gowlus, Jr., M. D., 655 N. Thirteenth Street, Philadelphia.

Edward Steel Haines, M. D., Rutledge.

J. Burton Haines, M. D., Prospect Park, Moore.

Clare H. Hanley, M. D., Scranton.

R. Franklin Hill, M. D., Hahnemann Hospital, Philadelphia.

Joel S. Kelsey, Jr., M. D., Homœopathic Hospital, Pittsburgh.

W. D. Kennedy, M. D., Lansdowne.

J. M. Kenworthy, M. D., Media.

John D. Kistler, M. D., Homœopathic Hospital, Pittsburgh.

Wm. Earl Kistler, M. D., Hahnemann Hospital, Philadelphia.

R. S. Leopold, M. D., 332 W. Chelten Avenue, Philadelphia.

H. S. Mauser, M. D., Scranton.

R. Randolph Paxson, M. D., Hulmeville.

John S. M. Pratt, M. D., Coatesville.

John W. Pratt, M. D. Coatesville.

J. F. Preston, M. D., Chester.

Mary Davis Ridgway, M. D., 5348 Wayne Avenue, Philadelphia.

F. W. Roberts, M. D., Plymouth.

Louis D. Roberts, M. D., Scranton.

Antoinette E. C. Russell, M. D., 5348 Wayne Avenue, Philadelphia.

A. D. Thomas, M. D., Forty Fort.

W. I. Tomlinson, M. D., 1415 Shunk Street, Philadelphia.

Howard L. Vail, M. D., Scranton.

Oliver B. Wait, M. D., 5203 Chester Avenue, Philadelphia.

George C. Webster, M. D., 311 W. Seventh Street, Chester.

C. J. Wesner, M. D., Johnstown.

Robert V. White, M. D., Scranton.

ELECTION OF OFFICERS.

President, H. F. Schantz, M. D., Reading.

First Vice-President, G. B. Moreland, M. D., Pittsburgh.

Second Vice-President, J. H. Reading, M. D., Philadelphia.

Recording Secretary, E. H. Pond, M. D., Pittsburgh.

Corresponding Secretary, E. M. Gramm, M. D., Philadelphia.

Treasurer, Ella D. Goff, M. D., Pittsburgh, N. S.

Necrologist, W. F. Baker, M. D., Philadelphia.

Censor (to serve three years,) E. P. Clark, M. D., Pittsburgh.

Trustees (to serve for three years,) H. F. Heilner, M. D., Scranton; Ralph Bernstein, M. D., Philadelphia; D. P. Maddux, M. D., Chester.

On motion a vote of thanks was tendered to the Homœopathic Medical Society of Lackawanna County for the very hospitable entertainment it had given the Society.

On motion a vote of thanks was tendered to the local Press of Scranton for the full reports of the meeting.

PROGRAM.

TUESDAY, SEPTEMBER 21.

HOMŒOPATHIC INSTITUTES AND CLINICAL MEDICINE.

H. M. Bunting, M. D., Chairman.

Associates—Drs. Clarence Bartlett, W. G. Dietz, G. M. Golden, W. K. Ingersoll, J. D. Keller, C. S. Kinney, B. R. Marsden, J. H. McClelland, O. H. Paxson, E. H. Pond, F. J. Slough, E. C. Statler, G. H. Wells.

H. M. Bunting, M. D., Norristown, "Some Clinical Experiences With Sinapis Nigra."

W. F. Baker, M. D., Philadelphia, "Clinical Homœopathic Remedies in Neurological Practice."

Clarence Bartlett, M. D., Philadelphia, "The Therapeutic Question; Its Difficulties and Its Solution."

G. M. Golden, M. D., Philadelphia, "Diagnosis of the Cardio-Vascular Function."

J. D. Keller, M. D., Hanover, "Clinical Cases."

Afternoon Session, 3 to 6 o'clock.

J. H. McClelland, M. D., Pittsburgh, "Homœopathy, a System of Therapeutics; Its Right to Survive."

O. H. Paxson, M. D., Philadelphia, "Blood Pressure; Its Value in Diagnosis."

E. H. Pond, M. D., Pittsburgh, "X-ray Treatment in Certain Skin Diseases."

G. H. Wells, M. D., Philadelphia, "The Influence of Heredity in Pulmonary Tuberculosis."

OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

W. W. Speakman, M. D., Chairman.

Associates—Drs. G. H. Haas, W. M. Hillegas, Edward Humphreys, G. W. Mackenzie, G. A. Mueller, G. J. Palen, I. G. Shallcross, J. W. Stitzel, C. M. Thomas, H. B. Ware, W. A. Weaver.

W. W. Speakman, M. D., Philadelphia, "Complications of Cataract Extraction."

G. W. Mackenzie, M. D., Philadelphia, "Hypertrophic Rhinitis and Treatment."

L. E. Marter, M. D., Philadelphia, "Ulceration of the Cornea."

G. J. Palen, M. D., Philadelphia, "Acute Otitis Media."

I. G. Shallcross, M. D., Philadelphia, "Syphilitic Laryngitis, from the Practitioner's Standpoint."

W. A. Weaver, M. D., Philadelphia, "Hypertrophy of the Turbinates."

Evening Session, 8 to 10:30 o'clock.

OBSTETRICS.

R. W. McCLELLAND, M. D., Chairman.

Associates—Drs. F. W. Boyer, Anna C. Clarke, J. E. James, Jr., Anna Johnston, E. A. Krusen, D. C. Kline, W. C. Mercer, C. S. Middleton, R. L. Perkins, C. C. Rinehart, E. K. Steckel, E. H. Van Deusen, M. A. Wesner, F. V. Woolridge, J. R. Swartz.

R. W. McClelland, M. D., Pittsburgh, "A Review of the Year's Progress in the Principles and Practice of Obstetrics."

F. W. Boyer, M. D., Pottsville, "Pneumonia in the New-Born."

Anna C. Clarke, M. D., Scranton, "Pelvic Diseases Complicating Pregnancy."

M. M. Fleagle, M. D., Hanover, "Missed Labor."

Anna Johnston, M. D., Pittsburgh, "After Delivery, What Next?"

W. C. Mercer, M. D., Philadelphia, "Occipito-Posterior Positions."

C. S. Middleton, M. D., Philadelphia, "The Application of Homœopathic Remedies in Obsterical Practice."

R. L. Perkins, M. D., Harrisburg, "The Diagnosis of Pregnancy."

C. C. Rinehart, M. D., Pittsburgh, "A Case from Practice."

E. H. Van Deusen, M. D., Philadelphia, "Non-Interference in Obstetrics."

M. A. Wesner, M. D., Johnstown, "Two Cases of Accidental Abortion and Their Treatment Compared."

WEDNESDAY, SEPTEMBER 22.

Morning Session, 9:30 to 1 o'clock.

GYNÆCOLOGY.

E. P. CLARK, M. D., Chairman.

Associates—Drs. E. F. Gifford, T. J. Gramm, D. B. James, N. F. Lane, E. S. H. McCauley, Margaret H. Schantz, W. A. Stewart, J. L. Peck.

E. P. Clark, M. D., Pittsburgh, "The Treatment of Abortions and Miscarriages by the General Practitioner."

E. F. Gifford, M. D., Erie, "Pelvic Peritonitis."

D. B. James, M. D., Philadelphia, "Backache in Women."

N. F. Lane, M. D., Philadelphia, "Endometritis."

PÆDOLOGY.

G. M. DEWITT, M. D., Chairman.

Associates—Drs. L. E. Davies, E. A. Farrington, E. H. Hill, R. H. Murdock, C. S. Raue, W. W. Van Baun.

G. M. DeWitt, M. D., Scranton, "Gastro-Enteritis."

E. A. Farrington, M. D., Philadelphia, "The Role of Systematic Motor and Sensory Training in Mental Diseases of Children."

E. H. Hill, M. D., Pittston, "Measles."

R. H. Murdock, M. D., Wilkes-Barre, "Spinal Meningitis."

C. S. Raue, M. D., Philadelphia, "The Diagnosis and Treatment of Empyema in Childhood."

W. W. Van Baun, M. D., Philadelphia, "Rheumatic Children."

Afternoon Session, 3 to 6 o'clock.

MATERIA MEDICA AND PROVINGS.

T. H. CARMICHAEL, M. D., Chairman.

Associates—Drs. Eva N. Blake, A. P. Bowie, Edward Cranch, Isaac Crowther, H. A. Fehr, M. M. Fleagle, I. B. Gilbert, O. S. Haines, Z. T. Miller, Trimble Pratt, C. M. Richards, W. A. Seibert.

T. H. Carmichael, M. D., Philadelphia, "The Action of Some Remedies on Mucous Membranes-Introductory."

Eva N. Blake, M. D., Philadelphia, "Pulsatilla—Its Action on Mucous Membranes."

A. P. Bowie, M. D., Uniontown, "Kali Bichromicum—Its Action on Mucous Membranes."

Edward Cranch, M. D., Erie, "Sepia—Its Action on Mucous Membranes."

M. M. Fleagle, M. D., Hanover, "Natrum Muriaticum—Its Action on Mucous Membranes."

I. B. Gilbert, M. D., Philadelphia, "Hydrastis—Its Action on Mucous Membranes."

O. S. Haines, M. D., Philadelphia, "Arsenicum and Arsenicum Iodatum—Their Action on Mucous Membranes."

Z. T. Miller, M. D., Philadelphia, "Calcarea Carbonica—Its Action on Mucous Membranes."

W. A. Seibert, M. D., Easton, "Mercurius—Its Action on Mucous Membranes (with comparisons)."

WEDNESDAY EVENING.

The Members of the Society and Visitors will be entertained by the Lackawanna County Homœopathic Medical Society.

THURSDAY, SEPTEMBER 23.

Morning Session, 9:30 to 1 o'clock.

PATHOLOGY AND PATHOLOGICAL ANATOMY.

S. W. Sappington, M. D., Chairman.

Associates—Drs. J. E. Belville, N. S. Betts, J. D. Elliott, C. D. Fox, F. S. Morris.

S. W. Sappington, M. D., Philadelphia, "Recent Advances in Medical Pathology."

J. E. Belville, M. D., Philadelphia, "The Pathology of Diabetes."

N. S. Betts, M. D., Philadelphia, "Recent Advances in Gynæcologic Pathology."

J. D. Elliott, M. D., Philadelphia, "Recent Advances in Surgical Pathology."

C. D. Fox, M. D., Philadelphia, "Recent Advances in Neuro-Pathology."

SURGERY.

W. B. Van Lennep, M. D., Chairman.

Associates—Drs. L. T. Ashcraft, C. A. Bigler, Jr., R. C. Casselberry, W. N. Hammond, Arthur Hartley, F. E. Howell, W. C. Hunsicker, H. P. Leopold, G. B. Moreland, H. L. Northrop, J. L. Peck, D. Roman, Deacon Steinmetz, G. A. Van Lennep.

W. B. Van Lennep, M. D., Philadelphia, "Chronic Pancreatitis."

L. T. Ashcraft, M. D., Philadelphia, "The Indications for Operation in Disease of the Prostate."

C. A. Bigler, Jr., M. D., Philadelphia, "Rectal Diseases in Children."

R. C. Casselberry, M. D., Chester, "Abdominal Adhesions."

J. D. Elliott, M. D., Philadelphia, "Fractures of the Skull and Their Treatment."

W. N. Hammond, M. D., Philadelphia, "The Modern Treatment of Diseases of the Knee Joint."

Arthur Hartley, M. D., Philadelphia, "The Surgeon, the Patient and the Anaesthetist."

F. E. Howell, M. D., Reading, "Spina Bifida."

W. C. Hunsicker, M. D., Philadelphia, "The Treatment of Acute Gonnorrhoeal Urethritis."

H. P. Leopold, M. D., Philadelphia, "Hernia."

Afternoon Session, 3 to 6 o'clock.

G. B. Moreland, M. D., Pittsburgh, "Some Conditions in and About the Rectum Causing Constipation and Their Treatment."

H. L. Northrop, M. D., Philadelphia, "Kleptomania."

J. L. Peck, M. D., Scranton, "Pyelonephritis."

D. Roman, M. D., Philadelphia, "The Surgery of the Pleural Cavity."

Deacon Steinmetz, M. D., Philadelphia, "Cholecystotomy vs. Cholecystectomy."

G. A. Van Lennep, M. D., Philadelphia, "Movable Kidney."

SANITARY SCIENCE.

Charles Platt, M. D., Chairman.

Associates—Drs. W. F. Baker, Ralph Bernstein, J. D. Boileau, A.

R. Garner, E. M. Gramm, G. W. Hartman, L. H. Hendrixson, E. L. Nesbit, F. B. Quackenbush.

Charles Platt, M. D., Philadelphia, "Overworked School Children."

W. F. Baker, M. D., Philadelphia, "The Waters of the Virginia Hot Springs; Their Analysis and Remedial Value."

Ralph Bernstein, M. D., Philadelphia, "Contagious Skin Diseases; Their Recognition, Relation to Public Health and Prevention of Spread."

J. D. Boileau, M. D., Philadelphia, "Street Car Sanitation."

A. R. Garner, M. D., Norristown, "Certain Aspects of Medicine as Related to Sociology."

E. M. Gramm, M. D., Philadelphia, "The Need of Instruction in Sexual Hygiene."

G. W. Hartman, M. D., Harrisburg, "Tuberculosis; the Non-Segregated Versus the Segregated Cases."

L. H. Hendrixson, M. D., New Holland, "The Fly Nuisance."

C. F. Mebus, Esq., C. E., Philadelphia, "Modern Methods of Sewage Disposal."

E. L. Nesbit, M. D., Bryn Mawr, "The Family Physician."

Conclusion of Reports of Sections and Discussions.

Final Report of the Board of Censors.

Unfinished Business.

New Business.

Selection of Place for Next Meeting.

Adjournment.

DELEGATES AND COMMITTEES.

Delegate to the American Institute of Homœopathy, Dr. T. H. Carmichael; alternate, Dr. R. L. Piper.

Delegates to the Interstate Committee of the American Institute of Homœopathy (to serve until December 31st, 1910,) Drs. Aug. Korndœrfer, Sr., and D. C. Kline; alternates, Drs. J. B. McClelland and W. A. Seibert.

Committee on Legislation (to serve 1908 and 1909,) J. J. Tuller, M. D., Chairman; associates, Drs. L. T. Ashcraft, F. W. Boyer, E. W. Brickley, H. M. Bunting, T. H. Carmichael, M. M. Fleagle,

D. P. Gerberich, E. M. Gramm, E. R. Gregg, C. H. Hofmann, D. C. Kline, Augustus Korndœrfer, Sr., J. H. McClelland, C. S. Middleton, G. B. Moreland, G. A. Mueller, E. C. Parsons, L. P. Posey, H. F. Schantz, W. A. Seibert, C. P. Seip, F. J. Slough, E. S. Snyder, L. A. Snyder, J. R. Swartz, J. W. Stitzel, W. B. Van Lennep, H. B. Ware, Julia G. Waylan.

Committee on Organization, Registration and Statistics, G. B. Moreland, M. D., Chairman; associates, Drs. E. H. Pond, E. M. Gramm.

Committee on Publication, E. M. Gramm, M. D., Chairman; associates, Drs. Ella D. Goff, G. B. Moreland.

Press Committee, H. F. Schantz, M. D., Chairman; associates, Drs. W. J. Martin, R. L. Piper.

Committee on Membership (to serve one year), E. C. Blackburn, W. H. Follmer, Ralph Bernstein; (to serve two years,) Drs. Anna C. Clarke, C. W. Sample, W. A. Stewart.

Committee on Hering Monument, C. P. Seip, M. D., Chairman; associates, Drs. B. F. Betts, A. P. Bowie, Edward Cranch, O. S. Haines, J. E. James, Sr., D. C. Kline, Augustus Korndœrfer, Sr., D. P. Maddux, W. J. Martin, J. B. McClelland, E. H. Morrow, W. A. Seibert, H. B. Ware.

Committee to encourage the study of Homœopathy, J. H. McClelland, M. D., Chairman; associates, Drs. W. B. Van Lennep, W. A. Seibert.

Committee to have lectures on Homœopathy given in the course of the Society for the Extension of University Teaching, the Trustees of the Society and Drs. F. F. Massey, W. A. Stewart, T. H. Carmichael.

Committee for combating the social evil, Drs. Emma T. Schreiner, F. F. Massey, Anna Johnston.

CHARTER OF THE HOMŒOPATHIC MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

To the Honorable, the Judges of the Court of Common Pleas of Philadelphia County, Pennsylvania:

In compliance with the requirements of an Act of the General Assembly of the Commonwealth of Pennsylvania, entitled "An Act to provide for the Incorporation and Regulation of Certain Corporations," approved the twenty-ninth day of April, A. D. 1874, and the supplements thereto, the undersigned, all of whom are citizens of Pennsylvania, having associated themselves together, with others hereinafter named, for the purpose hereinafter specified, and desiring that they may be incorporated according to law, do hereby certify:

First. The name of the proposed Corporation is The Homœopathic Medical Society of the State of Pennsylvania.

Second. The said Corporation is formed for the purpose of organizing the Homœopathic Medical Profession in the State of Pennsylvania and advancing Medical Sciences.

Third. The business of said Corporation is to be transacted in the City of Philadelphia.

Fourth. The said Corporation is to exist perpetually.

Fifth. The names and residences of the Corporators are as follows: William W. Van Baun, M. D., Philadelphia; John F. Cooper, M. D., Allegheny; Edward M. Gramm, M. D., Philadelphia; Z. T. Miller, M. D., Pittsburg; William B. Van Lennep, M. D., Philadelphia; Edward Cranch, M. D., Erie; Augustus Korndœrfer, Sr., M. D., Philadelphia; Alonzo P. Bowie, M. D., Uniontown; Clarence Bartlett, M. D., Philadelphia; Hugh Pitcairn, M. D., Harrisburg; Pemberton Dudley, M. D., Philadelphia; L. H. Willard, M. D., Allegheny; William C. Goodno, M. D., Philadelphia; Daniel P. Maddux, M. D., Chester; J. N. Mitchell, M. D., Philadelphia; Horace B. Ware, M. D., Scranton; William H. Keim, M. D., Philadelphia; W. A. Seibert, M. D., Easton; Charles M. Thomas, M. D., Philadelphia; J. H. McClelland, M. D., Pittsburg; John E. James, M. D., Philadelphia; Joseph E. Jones, M. D., West Chester; Isaac

G. Smedley, M. D., Philadelphia; H. C. Chisolm, M. D., Huntingdon; T. H. Carmichael, M. D., Philadelphia; all of the State of Pennsylvania.

Sixth. The number of Trustees of said Corporation is fixed at nine, and the names and residences of those who are chosen as Trustees until the next annual election are as follows: William W. Van Baun, M. D., Philadelphia; John F. Cooper, M. D., Allegheny; E. M. Gramm, M. D., Philadelphia; Z. T. Miller, M. D., Pittsburg; William B. Van Lennep, M. D., Philadelphia; Edward Cranch, M. D., Erie; William H. Keim, M. D., Philadelphia; J. N. Mitchell, M. D., Philadelphia; Daniel P. Maddux, M. D., Chester.

Seventh. At the next annual election for Trustees of the Corporation three Trustees shall be elected to serve for the term of one year, three others to serve for the term of two years, and three others to serve for the term of three years, and thereafter annually three Trustees shall be elected to serve for the term of three years in the place of those whose terms expire.

Witness our hands and seals this third day of November, A. D. eighteen hundred and ninety-six.

WILLIAM W. VAN BAUN, M. D. [L. S.],
WILLIAM B. VAN LENNEP, M. D. [L. S.],
CLARENCE BARTLETT, M. D. [L. S.],
W. C. GOODNO, M. D. [L. S.],
J. NICHOLAS MITCHELL, M. D. [L. S.],

COMMONWEALTH OF PENNSYLVANIA, COUNTY OF PHILADELPHIA, *ss.*:

Before me, the subscriber, a Notary Public for the Commonwealth of Pennsylvania, residing in the City of Philadelphia, personally appeared William W. Van Baun, M. D., William B. Van Lennep, M. D., and Clarence Bartlett, M. D., three of the subscribers of the above and foregoing certificate of incorporation of The Homœopathic Medical Society of the State of Pennsylvania, and in due form of law acknowledged the same to be their act and deed.

Witness my hand and official seal the third day of November, A. D. 1896.

[L. S.] WINFIELD S. SHEARD,
Notary Public.

IN THE COURT OF COMMON PLEAS FOR PHILADELPHIA COUNTY:

In the Matter of the Incorporation of The Homœopathic Medical Society of the State of Pennsylvania:

And now, to wit, this seventh day of December, A. D. 1896, the within Certificate of Incorporation having been on file in the Office of the Prothonotary of said Court since the twelfth day of November, A. D. 1896, on which publication of notice of intended application was first made, as appears from the entry thereon, and due proof of said publication having been presented to me, I do hereby certify that I have perused and examined said instrument and find the same to be in proper form and within the purposes named in the first class of Corporations specified in Section 2 of the Act of April 29, 1874, and that said purposes are lawful and not injurious to the community. It is, therefore, on motion of William C. Hannis, Esq., ordered and decreed that the said Charter be approved and is hereby approved, and upon the recording of said Charter and its endorsements and this decree in the office of the Recorder of Deeds in and for said County, which is now hereby directed, the subscribers and their associates shall thenceforth be a Corporation for the purposes and upon the terms and under the name herein stated.

[L. S.] T. K. FINLETTER,
Judge.

Recorded in the office for Recording Deeds, etc., in and for the City and County of Philadelphia in Charter Book No. 22, page 284, etc.

Witness my hand and Seal of Office this seventh day of December, A. D. 1896.

[L. S.] WILLIAM GEARY,
Recorder of Deeds.

BY-LAWS.

ARTICLE I.—Title.

This Corporation shall be known by the name and title of The Homœopathic Medical Society of the State of Pennsylvania.

ARTICLE II.—Object.

The said Society is formed for the purpose of organizing the homœopathic medical profession in the State of Pennsylvania and advancing medical sciences.

ARTICLE III.—Membership.

Section 1. This Society shall be composed of active, honorary and corresponding members.

Sec. 2. A candidate for active membership shall present to the Board of Censors an application, signed by himself, certifying that he has received the degree of Doctor of Medicine from an incorporated medical college, that he subscribes to the doctrine of *Similia Similibus Curentur,* and that he sustains a good moral character—these statements to be vouched for by two members of the Society in good standing. If found qualified, he may be elected a member. He shall not, however, be considered a member until he has paid the first year's dues and signed the Constitution, either in person or by proxy. An active member removing from the State, wishing to retain his membership, shall notify the Corresponding Secretary to that effect, otherwise the Corresponding Secretary shall drop his name from the roll. Any active member who shall be three years in arrears for dues shall forfeit his membership, and he shall not be reinstated until all arrearages shall have been paid. Membership shall also be forfeited by vote of the Society if a member fails to attend the meetings of the Society or present a paper once in five years. Any active member who shall be unable to comply with the requirements of this Society may be continued as an active member, without the payment of dues, by vote of the Society.

Sec. 3. Any Homœopathic physician, not a resident of Pennsylvania, who may be judged worthy, may, by a two-thirds vote of

the members present, be elected an honorary member at any annual meeting; provided, that the proposal for honorary membership shall have been made at a previous annual meeting, and said proposal been approved by the Board of Censors, but no more than two shall be elected in one year. Honorary members shall have all the privileges of membership except the right to vote and to hold office, and shall be exempt from dues.

Sec. 4. Any Homœopathic physician residing outside of the United States may be elected a corresponding member by a vote of two-thirds of the members present at any annual meeting, but not more than two shall be elected in one year. Corresponding members shall have all the privileges of membership except the right to vote and to hold office, and shall be exempt from dues.

ARTICLE IV.—Officers.

Section 1. The officers of this Society shall be a President, a First Vice-President, a Second Vice-President, a Recording Secretary, a Corresponding Secretary, a Treasurer, a Necrologist, a Board of Trustees consisting of nine members, and a Board of Censors consisting of three members.

Sec. 2. The nomination for officers of the Society shall be the special order of business for 11 o'clock on the morning of the second day of the annual meeting. The officers shall be elected by ballot, the election to be the special order of business for 11 o'clock on the morning of the third day of the annual meeting. The candidate receiving a majority of the votes cast shall be declared elected. The officers elected shall enter upon their respective duties on the first day of January next succeeding their election, to serve for the term of one year, or until their successors are elected, except as hereinafter provided.

Sec. 3. The Board of Trustees shall serve for a term of three years, three members to be elected annually. No member of the Board of Trustees shall be eligible to serve two terms in succession.

Sec. 4. The Censors shall be elected to serve for three years, one member to be elected annually.

ARTICLE V.—Duties of Officers.

Section 1. The President shall preside at all meetings of the

Society. He shall preserve order, appoint all committees unless otherwise directed, and discharge all other duties usually pertaining to a presiding officer, in accordance with the provisions of the Charter and these By-Laws. He shall be, *ex-officio*, a member of all standing committees of the Society, and Chairman of the Board of Trustees. He shall not be eligible to office two terms in succession. On assuming office it shall be his duty to appoint a Chairman of each of the Sections designated in Article VIII, Section 1, and the Chairman, in conjunction with the President, shall select his associates.

Sec. 2. The Vice-Presidents, in the order of their election, shall perform the duties of the President in his absence.

Sec. 3. The Recording Secretary shall keep correct minutes of the proceedings of the Society, and, when approved, transcribe them in a book kept for that purpose. He shall have charge of the minute book, all papers, documents, etc., belonging to the Society, other than those pertaining to the Treasurer, the Trustees, or the Committee on Publication, and shall keep them during the intervals of the meetings of the Society. Within twenty-one days after adjournment he shall furnish the Committee on Publication with a correct copy of the minutes for publication in the Transactions, countersign orders upon the Treasurer in accordance with the By-Laws, and shall perform such other duties pertaining to his office as may from time to time be required. He shall be, *ex-officio*, Chairman of the Committee on Organization, Registration and Statistics.

Sec. 4. The Corresponding Secretary shall preserve all letters received by the Society, conduct such correspondence as shall tend to advance its interests, prepare the order of business for the annual session of the Society, give at least two weeks' notice of all meetings, keep a record of all members, with the date of admission of each, present all communications to the Society, notify all committees of their appointment and of the business referred to them, and notify all members of their election. He shall be, *ex-officio*, Chairman of the Committee on Publication.

Sec. 5. The Treasurer shall hold the evidence of all property belonging to The Homœopathic Medical Society of the State of Pennsylvania, receive all moneys intended for the treasury of the Society, and deposit the same in the name of The Homœopathic

Medical Society of the State of Pennsylvania as shall be directed by the Board of Trustees, make no payments except on orders drawn in accordance with the By-Laws, keep a full account of receipts and expenditures, which shall at all times be open to the inspection of the Board of Trustees, make a report to the Society in writing at each annual meeting, and, whenever required, of the state of his accounts and the condition of the treasury, and shall annually notify all members of their arrearages.

SEC. 6. The Necrologist, upon the death of a member of the Society, shall prepare a suitable obituary and present it to the Society at its annual meeting.

SEC. 7. The Trustees shall have general supervision of the business of the Society, hold at least one meeting every year, and make a report at the annual session of the Society. The Trustees shall have power to draw upon the treasury for any legitimate expenses of the Board or to meet any extraordinary expense deemed necessary by a majority vote of the Board, and such moneys shall only be paid upon a written order on the Treasurer of the Society, signed by the Chairman and Secretary of the Board of Trustees.

The Trustees, acting as the Judicial Council, shall take cognizance of and decide upon all questions of an ethical or judicial character. All questions of a personal character shall be referred at once, without discussion, to the Judicial Council. Every decision of the Council shall be in writing, signed by a majority of the members present, be reported to this Society at the earliest practical moment, and shall be final. The Council shall preserve permanent records of all its proceedings.

SEC. 8. The Censors shall examine the credentials of candidates for membership, and report to the Society for election those who may be found qualified. They may report in the regular order of business or at the close of the report of any bureau.

ARTICLE VI.—MEETINGS.

SECTION 1. The annual meeting shall be held in the month of September, on the days and at the place decided upon at the annual meeting next preceding; an invitation to hold the annual meeting in any locality shall be considered only when extended by a regularly organized society.

Sec. 2. Nine members shall constitute a quorum for the transaction of the ordinary business of the Society; but for scientific or literary purposes, unless an actual count be called for, a quorum shall always be presumed. For amending the By-Laws twenty members shall constitute a quorum.

Sec. 3. The Board of Trustees shall have power to direct such other meetings as it may judge advisable.

Sec. 4. Should occasion arise making it necessary to change the time and place of meeting agreed upon at the previous annual session, the same may be done by a vote of the Board of Trustees.

ARTICLE VII.—Dues.

Section 1. Active members shall pay the sum of five dollars upon their election.

Sec. 2. Active members shall pay annually, in advance, the sum of three dollars toward defraying the expenses of the Society. Any member who shall fail to pay his annual dues for three successive years shall be dropped from the roll of members, after having been notified by the Corresponding Secretary of the forfeiture of his membership. The published proceedings of the Society will be furnished only to those members who are not in arrears for dues.

ARTICLE VIII.—Sections.

Section 1. The following Sections shall be appointed as hereinafter provided:

Gynæcology.
Homœopathic Institutes and Clinical Medicine.
Materia Medica and Provings.
Obstetrics.
Ophthalmology, Otology and Laryngology.
Pædology.
Pathology and Pathological Anatomy.
Sanitary Science.
Surgery.

Sec. 2. Each Section shall be composed of not less than five members, and no member shall be placed on more than one Section.

Sec. 3. The Sections shall report in order of rotation each succeeding year, except the Section of Materia Medica, whose report

shall be a special order of business at the opening of the afternoon session of the second day of the Society meeting.

SEC. 4. If a member of a Section shall resign or decline to serve, the Chairman of the Section shall fill the vacancy and notify the Corresponding Secretary of his action.

ARTICLE IX.—STANDING COMMITTEES.

The following Committees shall be appointed by the President on assuming office:

A Committee on Legislation, which shall serve two years, of at least nine members, to be appointed by the President in alternate years, whose duty it shall be to give special attention to all legislation involving the interests of the Society.

A Committee on Organization, Registration and Statistics, of at least three members, to be appointed by the President, of which the Recording Secretary shall be Chairman. It shall receive all credentials of delegates to the Society; receive and preserve reports from local and State societies, colleges and other institutions; keep a record of the number of members admitted and withdrawn from the Society, and perform such other duties as may be directed by the Society. From these data the annual report of the Committee shall be prepared.

A Publication Committee, consisting of the Treasurer, Recording Secretary and Corresponding Secretary, the latter being Chairman; but the number of its members may be increased at the discretion of the Society. It shall be the duty of the Committee within six months from the date of the annual meeting to publish and issue the Transactions to all who are entitled to receive them, unless otherwise directed by the Society.

A Committeee on Membership and Organization, to consist of six members, who shall serve for two years, three members to be appointed each year. It shall be the duty of this Committee to aid in obtaining new members for the Society; to urge attendance at the annual meetings, and to promote the organization of county and other local societies, so that fraternal and close professional relationship of the members of the Homœopathic medical profession may be furthered.

A Committee delegated to serve on the Interstate Committee of

the American Institute of Homœopathy, to consist of two members of this Society, who shall also be members of the American Institute of Homœopathy, to serve for a term of four years; and two alternates, who shall also serve four years, and who shall be members of this Society and of the American Institute of Homœopathy.

ARTICLE X.—Papers and Discussions.

Section 1. Each paper presented to this Society shall be through its appropriate Section. All papers to be presented by any Section shall be in the hands of the Chairman thereof at the opening of the session. All papers shall be subject to the approval and revision of the Publication Committee. No paper will be received by the Society in an incomplete condition, and no paper will be published as part of the Transactions which has been published previous to its presentation to this Society. No paper shall occupy more than fifteen minutes in the reading, unless the time be extended by an affirmative three-fourths' vote of the members of the Society present. In the absence of the author of a paper the Chairman of its appropriate Section may request any member of the Society present to read the same or it shall be read at the request of five members. Any paper may be published in a medical journal subsequent to its presentation to the Society, provided that the original be retained in the custody of the Publication Committee.

All communications read before the Society shall become its property.

Sec. 2. The discussion shall follow the reading of each paper, unless otherwise ordered by the Society. All discussions shall be confined to the subject of the paper or report. No member shall speak more than twice on the same subject, except by vote of the Society, and each speaker shall be limited to a speech of ten minutes, and to one of five minutes if he speaks a second time. No excess of time shall be allowed, except by consent of the Society. The reader of the paper shall be allowed ten minutes at the close of the discussion.

ARTICLE XI.—Seal.

The Society shall have and use one common seal. The Corresponding Secretary shall be the custodian of the seal.

ARTICLE XII.—Senior Members.

Members of the Society who shall have maintained twenty-one years of consecutive membership shall be Senior Members, and their names shall be printed in capital letters in the list of members in the Transactions.

ARTICLE XIII.—Code of Ethics.

Section 1. The Code of Ethics of the American Institute of Homœopathy is adopted by this Society for its guidance.

Sec. 2. All complaints of violation of the Code of Ethics shall be referred to the Judicial Council, and the decision of the Council shall be final.

ARTICLE XIV.—Minutes.

The reading of the minutes for approval and record shall be the first order of business at the morning meetings of the Society, and at the close of the final session.

ARTICLE XV.—Amendments.

These By-Laws may be altered or amended by a vote of two-thirds of the members present at any annual meeting; *provided,* that notice of such proposed alteration or amendment shall have been given to the Society in writing at the annual meeting next preceding, and notice of such proposed alteration or amendment shall appear in the call for the meeting at which it is to be acted upon.

CODE OF MEDICAL ETHICS

OF THE

AMERICAN INSTITUTE OF HOMŒOPATHY.

(ADOPTED IN 1893.)

SCOPE.

The scope of a Code of Medical Ethics comprises the reciprocal duties and obligations of physicians and patients; the duties and obligations of physicians to each other; and the reciprocal duties and obligations of physicians and the public.

FUNDAMENTAL PRINCIPLES.

The great principles upon which Medical Ethics are based are these:

1. The great end and object of the physician's efforts should be: "The greatest good to the patient."

2. The rule of conduct of physician and patient, and of physicians toward each other, should be the GOLDEN RULE: "As ye would that men should do to you, do ye also to them, likewise."

The various articles of the Code are only special applications of these great principles.

PART I.

RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND PATIENTS.

Article I. DUTIES OF PHYSICIANS TO PATIENTS.
" II. DUTIES OF PATIENTS TO THEIR PHYSICIANS.

PART II.

DUTIES AND OBLIGATIONS OF PHYSICIANS TO EACH OTHER.

Article I. DUTIES AS MEMBERS OF THE MEDICAL PROFESSION.
" II. PROFESSIONAL SERVICES TO EACH OTHER.
" III. VICARIOUS SERVICES.
" IV. IN REGARD TO CONSULTATION.
" V. IN CASES OF INTERFERENCE.

" VI. Differences Between Physicians.
" VII. Concerning Pecuniary Obligation.

PART III.

RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article I. Duties of the Profession to the Public.
" II. Obligations of the Public to Physicians.

PART I.

OF THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THEIR PATIENTS.

Article I.—Duties of the Physician to the Patient.

Section 1. The physician should hold himself in constant readiness to obey the calls of the sick. He should bear in mind the sacred character of his calling and the great responsibility which it involves, and should remember that the comfort, the health and the lives of his patients depend upon the skill, attention and faithfulness with which he performs his professional duties.

Sec. 2. The physician, in order that he may be able to exercise his vocation to the best advantage of the patient, should possess his respect and confidence. These must be acquired and retained by faithful attention to his malady, by indulgent tenderness toward the weaknesses incident to his condition, and by the exercise of a firm but kindly authority. The physician is bound to keep secret whatever he may either hear or observe while in the discharge of his professional duties, respecting the private affairs of the patient or his family. And this obligation is not limited to the period during which the physician is in attendance on the patient. The patient should be made to feel that he has, in his physician, a friend who will guard his secrets with scrupulous honor and fidelity.

Sec. 3. The physician should visit his patient as often as may be necessary to enable him to acquire and keep a full knowledge of the nature, progress, changes and complications of the disease, and to do for the patient the utmost of good that he is able. But he should carefully avoid making unnecessary visits lest he render the

patient needlessly anxious about his case, or expose himself to the charge of being actuated by mercenary motives.

SEC. 4. The physician should not give expression to gloomy forebodings respecting the patient's diseases, nor magnify the gravity of the case. Bearing in mind the almost infinite resources of nature, he should be cheerful and hopeful, both in mind and manner. This will enable him the better to exercise his faculties and apply his knowledge for the patient's benefit, and will inspire the patient with confidence, courage and fortitude, which are the physician's best moral adjuvants.

But it is the physician's duty to state the true nature and prospects of the case, from time to time, to some judicious friend or relative of the patient, and to keep this person fully informed of its changes and probable issue; and if the patient himself request the physician to disclose to him the nature and prognosis of his disease, it is his duty to state tenderly, but frankly, the whole truth—provided the patient be of sound mind and strong enough to receive the disclosure without serious injury. The patient has a right to know the truth. If, moreover, facts within the physician's knowledge lead him to believe that it is of great importance in relation to the patient's affairs, that he should be warned of the approach of death, it is the physician's duty to reveal to the patient's nearest friend, or to the patient himself, the true state of the case, and the importance of timely action.

SEC. 5. Whether the case proceed favorably, or become manifestly incurable, it is the physician's duty to continue his attendance faithfully and conscientiously so long as the patient may desire it. He is not justified in abandoning a case merely because he supposes it incurable.

SEC. 6. As the patient has an undoubted right to dismiss his physician for reasons satisfactory to himself, so likewise, the physician may, with equal propriety, decline to attend patients, when his self-respect or dignity seem to him to require this step; as, for example, when they persistently refuse to comply with his directions.

SEC. 7. In difficult or protracted cases consultations are advisable. They tend to increase the knowledge, energy and confidence of the physician, and to maintain the courage of the patient. The physician should be ready to act upon any desire which the patient may express for a consultation, even though he may not himself feel

the need of it. Nothing is so likely to maintain the patient's confidence as alacrity in this respect. Moreover, such a course is but just to him, for he has an indisputable right to whatever aid or counsel he may think likely to be of service to him.

SEC. 8. The intimate relations into which the physician is brought with his patient give him opportunity to exercise a powerful moral influence over him. This should always be exerted to turn him from dangerous or vicious courses towards a temperate and virtuous life. The physician is sometimes called to assist in practices of questionable propriety, and even of a criminal character. Among these may be mentioned the pretense of disease, in order to evade services demanded by law, as jury or military duty; the concealment of organic disease or of morbid tendencies, in order to secure favorable rates of life insurance, or for deception of other kinds; and especially the procurement of abortion when not necessary to save the life of the mother. To all such propositions, the physician should present an inflexible opposition. It is his duty, in an authoritative, but friendly manner, to explain and urge the nature, illegality and guilt of the proposed action, and to use every effort to dissuade from it, and to strengthen the patient's virtue and sense of right. The physician should be aware of the frequency of criminal abortion, and of the different methods employed for it, and should take every occasion to warn those who may be tempted to resort to it. In no case should the physician induce abortion, or premature labor, without a previous consultation, with the most experienced practitioners obtainable, nor without the most clear and imperative reasons.

Article II.—Duties and Obligations of Patients to Their Physicians.

SECTION 1. Physicians are required, by the nature of their profession, to sacrifice comfort, ease and even health, for the sake of their patients. Patients should reflect upon this, and should understand and remember that they have corresponding duties and obligations towards their physicians.

SEC. 2. The patient should select a physician in whose knowledge, skill and fidelity he can place implicit confidence; whose habits of life are regular and temperate, and whose character and demeanor are such that he can regard him as a personal friend. He must be

able to confide in him freely. And the physician should not be changed for light reasons. A physician thoroughly acquainted with the constitution, temperament and tendencies of a family can the more successfully treat them.

SEC. 3. The patient should always consult his physician as early as possible after he has discovered that he is ill. A disease which is trifling at its onset may grow formidable through neglect. The physician should be regarded as a confidential adviser, who, on being early consulted, may prevent a sickness.

SEC. 4. The patient should faithfully and unreservedly state to his physician the supposed cause of his malady, and tell him everything that may have a bearing upon its nature. Since the physician is under the strongest obligations to secrecy, the patient should not allow considerations of delicacy, modesty or pride to prevent an entirely frank statement of his case, and candid and full replies to interrogatories.

SEC. 5. The patient should implicitly obey his physician's injunctions as regards diet, regimen and medical treatment. If he deviate from these directions, he cannot hold the physician to a full responsibility in the case; and, further, by a partial obedience he incurs some personal risk, since, in the treatment of diseases, all parts of the physician's advice are made to harmonize, and each is dependent on the others and may be unsafe without the coincidence of the others. Moreover, he does the physician an undeserved, and often a serious wrong. If the patient have not sufficient confidence in his physician, and respect for him, to follow his directions, it were better for him to frankly say so, and to employ another in whom he can confide.

The patient should never allow himself, while under a physician's treatment, to take other medicines than those prescribed by him. He would, by so doing, incur a serious risk of taking medicines that are incompatible with each other. If desirous of trying any other mode of treatment it would be much better frankly to state the fact to his physician and ask his advice.

SEC. 6. The patient should, if possible, avoid receiving the friendly visit of a physician other than the one under whose charge he is. When he receives such visits he should avoid conversation

on the subject of his disease, for an accidental observation might give him false impressions respecting his disease or destroy his confidence in the treatment he is pursuing. He should never send for a consulting physician without the express consent of his own medical attendant, for physicians can act together for the advantage of their patient only when they act harmoniously. Nor should he, by a secret appointment, constrain his medical attendant to meet another physician with whom he might not be willing to consult; but the patient has an undoubted right to have the opinion of any physician whom he may desire upon his case. His proper course is to request his medical attendant to arrange a consultation and frankly state his desire for the physician whom he may prefer. If his medical attendant decline the consultation it is then for the patient to determine whether he will insist and thus dismiss his medical attendant, or whether he will defer to the judgment of his own physician. And the patient has a right thus to choose.

Sec. 7. If the patient wishes to dismiss his physician he should, in justice and in common courtesy, state his reasons, and, if possible in a friendly manner. To dispense with the service of a physician need not, of necessity, change the social relations of the parties.

Sec. 8. The patient should, when practicable, send for the physician in the morning, before his usual hour for leaving home. He will, by so doing, secure his earlier attendance, and will enable him the better to apportion his time so as to do justice to all his calls and engagements. He should call on his physician during his office hours only, and should avoid disturbing him in hours devoted to meals, rest and sleep. And in receiving his physician's visits he should avoid compelling him to wait, even a few minutes. The aggregate of petty detentions, while the patient is making some needless preparation to receive the physician, amount to a serious waste of valuable time.

PART II.

OF THE DUTIES AND OBLIGATIONS OF PHYSICIANS TO THE PROFESSION AND TO EACH OTHER.

Article I.—Duties to the Profession.

SECTION 1. Inasmuch as every member of the medical profession partakes of the honor in which it is held, and is entitled to its privileges and immunities and profits by the scientific labors of his predecessors and associates, it is his duty faithfully to endeavor, in his turn, to elevate the position of the profession, and, by every honorable exertion, to enrich the science of medicine.

SEC. 2. In no other profession should a higher standard of morality and greater purity of personal character be required. Physicians ought to come up to this standard and do what they may to exalt it. As the practice of medicine requires constant exercise of a vigorous and clear understanding, and as the practitioner should be, at all times, ready for emergencies in which the welfare and even the life of a fellow-creature may depend upon his steady hand, acute eye, and unclouded brain, it is incumbent upon the physician to be temperate in all things.

SEC. 3. The physician should not resort to public advertisements or private cards or handbills, inviting the attention of persons affected by particular diseases or publicly offering advice and medicine to the poor *gratis*, or promising radical cures. Neither should he publish cases of operations in the daily prints, nor invite laymen to be present at operations, nor solicit or exhibit certificates of skill and success, nor perform any similar act.

SEC. 4. It is equally derogatory to professional character for a physician to hold a patent for any nostrum or any surgical instrument or appliance, or to keep secret the nature of composition of any medicine used by him. Such restriction or concealment is inconsistent with the beneficence and liberality which should characterize the medical profession. But it is the duty of the physician to avail himself of every opportunity to observe the action and study the properties of new or secret remedies and new processes of preparing medicines as well as new modes of treating diseases, and to subject them to the analysis of scientific investigation. For the

physician should always bear in mind that the great object of his profession is to cure the sick, and that it is not only admissible, but it is his solemn duty to investigate thoroughly and without prejudice whatever offers any probability of adding to his knowledge of the art and means of curing and of thus enriching the science of medicine.

Article II.—Professional Services of Physicians to Each Other.

SECTION 1. All practitioners of medicine, their wives and children, while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them. Physicians, when ill, are incompetent to prescribe for themselves. The natural anxiety and solicitude which they feel for members of their own family when ill tend to obscure their professional judgment and make it difficult to treat them. Under these circumstances physicians are peculiarly dependent on each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. But visits should not be obtruded officiously or unasked upon a sick physician.

If, however, a physician in affluent circumstances, request the attendance of a distant professional brother and offer an *honorarium*, it is not proper to decline it, for one should not, even from a kindly motive, impose upon another a pecuniary obligation which the recipient would not wish to incur.

If a physician is called from any considerable distance the expense of travel, etc., thereby incurred should always be paid by the physician receiving the visit, and an *honorarium* may be tendered if time is consumed in making the visit.

Article III.—Duties of Physicians as Regards Vicarious Offices.

SECTION 1. Attention to his personal affairs, the pursuit of health and the various contingencies to which the physician is peculiarly exposed, sometimes compel him temporarily to withdraw from his duties to his patients and to request some of his professional brethren to discharge them for him. Compliance with such a request is an act of courtesy which should always be performed with the utmost consideration for the interests and character of the physician relieved. And when this is done for a short period only all the

pecuniary obligations for such services should belong to him. But if a physician neglect his business in quest of amusement and pleasure he is not entitled to the frequent and long-continued exercise of this fraternal courtesy without conceding to the physician who acts for him the fees accruing from the duties discharged by the latter.

SEC. 2. Obsterical and surgical cases involve unusual fatigue and responsibility, and it is just that the fees accruing therefrom should belong to the physician who attends them.

Article IV.—Duties of Physicians in Regard to Consultations.

SECTION 1. A complete medical education, of which the diploma of a medical college is the formal voucher, furnishes the only presumptive evidence of the professional acquirements and abilities. But the annals of the profession contain the names of some who, not having the advantage of a complete medical education, became, nevertheless, through their own exertions and abilities, brilliant scholars and successful practitioners. A practitioner, therefore, whatever his credentials may be, who enjoys a good moral and professional standing in the community, should not be excluded from fellowship, nor his aid rejected, when it is desired by the patient in consultation. No difference in views on subjects of medical principles or practice should be allowed to influence a physician against consenting to a consultation with a fellow practitioner. The very object of a consultation is to bring together those who may, perhaps, differ in their views of the disease and its appropriate treatment, in the hope that, from a comparison of different views, may be derived a just estimate of the disease and a successful course of treatment.

No tests of orthodoxy in medical practice should be applied to limit the freedom of consultations. Medicine is a progressive science. Its history shows that what is heresy in one century may and probably will be orthodoxy in the next. No greater misfortune can befall the medical profession than the action of an influential association or academy establishing a creed or standard of orthodoxy or "regularity." It will be fatal to freedom and progress in opinion and practice. On the other hand, nothing will so stimulate the healthy growth of the profession, both in scientific strength and

in the honorable estimation of the public, as the universal and sincere adoption of a platform which shall recognize and guarantee:

1. A truly fraternal good will and fellowship among all who devote themselves to the care of the sick.

2. A thorough and complete knowledge, however obtained, of all the direct and collateral branches of medical science—as it exists in all sects and schools of medicine—as the essential qualification of a physician.

3. Perfect freedom of opinion and practice, as the unquestionable prerogative of the practitioner, who is the sole judge of what is the best mode of treament in each case of sickness intrusted to his care.

The physician may, with propriety, decline to meet a practitioner of whose inimical feelings toward himself or of whose general unfairness in consultations he is satisfied. But in such a case he should explain to the patient his reasons; and if the patient desire the opinion of the practitioner objected to the family physician may withdraw from the case and allow the other to be sent for. But in justice to the latter the state of affairs should be explained to him at the time he is requested to visit the patient.

SEC. 2. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together; and this is generally practicable, for society allows the plea of professional engagements to excuse the neglect of all others, and to be a valid reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period of time, after which the consultation should be considered postponed to a new appointment. If it be the attending physician who is present he will, of course, see the patient and prescribe; but if it be the consulting physician he should retire without seeing the patient, except in case of emergency, or when he has been called from a considerable distance, in which case he may examine the patient and give his opinion in writing and under seal, to be delivered to the attending physician.

SEC. 3. In consultations no rivalry or jealousy should be indulged in. Candor, probity and all due respect should be exercised toward the physician in charge of the case. If the consulting phy-

sician cannot agree with him respecting the nature and proper treatment of the case the physician should state this fact to the patient or his nearest friend, both physicians being present at the time, and should request him to select the one in whom he has most confidence But if they agree sufficiently to take joint charge of the case, then the consulting physician must justify and uphold, so far as he can conscientiously do so, the practice of his associate, and must abstain from any hints, insinuations or actions which might in any way impair the confidence which the patient reposes in him, or affect his reputation. He must refrain from any extraordinary attentions or assiduities calculated to ingratiate himself in the patient's favor to supplant his associate.

Sec. 4. In consultations the attending physician should first put the necessary questions to the patient. After this the consulting physician should make such additional inquiries and examinations as may be needed to satisfy him of the true nature of the case. But he should avoid making a parade of examining the patient more thoroughly than had been done before, rather suggesting to the attending physician wherever is possible, to make whatever examinations he desires, than making them himself. Both physicians should then retire to a private room for deliberation.

Sec. 5. In consultations the attending physician should deliver his opinion first; and, when there are several consulting physicians, they should express their opinions in the order in which they have been called in. Should an irreconcilable diversity of opinion occur, when more than two physicians meet in consultation, the opinion of the majority should be regarded as decisive; but, if the number be equal on each side, the decision should rest with the attending physician. If two physicians, in consultation, cannot agree they should call in a third to act as umpire. If this be not practicable the patient must be requested to select the physician in whom he is most willing to confide. The physician who is left in the minority should, without any ill-feeling, retire from the consultation and from any further participation in the management of the case; and, in justice to the physician thus retiring, the fact of his difference from his associates should, in the presence of all the physicians attending, be explained to the patient as his reason for withdrawing from the case.

SEC. 6. The attending physician should communicate to the patient or his friends the directions agreed upon in the consultation, as well as any opinion which it may be thought proper to express. But no statement or discussion should take place before the patient or his friends, except in the presence of all physicians attending, and by their common consent. And no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence. No decision arrived at in a consultation is to be regarded as restraining the attending physician from making such variations in the treatment as any subsequent change in the case may demand. But such variation, and the reason for it, ought to be carefully noted at the time, and detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician, if he is sent for in an emergency when the attending physician is out of the way; and similar explanations must be made by him at the next meeting.

SEC. 7. Sometimes a special consultation is desirable in cases in which the continued attendance of two physicians might be objectionable to the patient. The consulting physician, in such a case, should sedulously avoid all further unsolicited attendance. Such consultations require an extraordinary outlay of time and attention, and at least a *double honorarium* may be reasonably expected.

SEC. 8. The consulting physician cannot, with propriety, take exclusive charge at any time of the patient in whose case he has been called in consultation without the consent of the attending physician, except in cases provided for by the third sentence of section 3 and by the fourth sentence of section 5, of this article.

Article V.—Duties of Physicians in Cases of Interference.

SECTION 1. Medicine is a liberal profession, and those admitted into its ranks should base their expectations of success upon the extent of their qualifications, not upon intrigue or artifice. A physician should not allow himself to feel envious or jealous of a brother practitioner. The distinction which one successful physician wins is shared by the whole profession. Nor should a physician suffer himself to feel ill-will towards another who may come

into his neighborhood and appears likely to take a share of the business which he has hitherto enjoyed. Such feelings are inconsistent with the beneficent and liberal nature of the profession. Liberality and true generous fraternity in thought, word and deed will unite the interests of all the members of the profession, and will so exalt the estimation in which it is held in the community that, confidence being increased, business will likewise increase; and to physicians will be accorded the position which, of right, should be theirs, that of confidential family advisers in all matters pertaining to the care of the body in health no less than in sickness.

SEC. 2. The physician, in his intercourse with a patient who is under the care of another practitioner, should observe the strictest caution and reserve. No meddling questions should be asked in any interview for business or friendship, no disingenuous hints thrown out relating to the nature and treatment of his disorder; nor should the patient be allowed to converse upon those topics. No course of conduct should be pursued which might, directly or indirectly, tend to diminish the trust reposed in the physician employed.

SEC. 3. A physician should not take charge of a patient who is, or has recently been, under the charge of another practitioner in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or has been regularly notified that his services are no longer required. Under such circumstances no unjust or illiberal remarks should be made or insinuations thrown out in relation to the treatment pursued by the previous physician. Nor should the physician permit the patient unreasonably to find fault with his predecessor, for patients often become dissatisfied with their attention on account of the mere duration of a case which no degree of professional knowledge or skill could have shortened.

SEC. 4. In cases of accident or sudden emergency one or more physicians are often sent for by alarmed friends. Courtesy should assign the patient to the first of these that arrives; and he should select from those present such additional assistance as he may deem necessary. But he should also request the family physician (if there be one) to be sent for, and on his arrival, resign the case into his hands. The practitioner of the patient, when he arrives, should

take the place of any one called in his absence. "The practitioner of any patient" is the man whom he has in any way given to understand that he regards him as his medical adviser, or who would now be in charge of the case were it not for his absence, sickness or other disability.

SEC. 5. In a sparse population, a physician, when visiting a sick person, may be desired to see, in an emergency, a neighboring patient, who is under the regular charge of another physician. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere as little as possible with the general plan of treatment; to assume no farther direction of the case unless it be expressly desired; and in the latter case to request an immediate consultation with the practitioner previously employed.

SEC. 6. A wealthy physician should not give advice *gratis* to the affluent, because his so doing is an injury to his professional brethren. The office of the physician can never be supported as an exclusively beneficent one, and it is defrauding, in some degree, the common fund when fees are dispensed with which might justly be claimed.

SEC. 7. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished in the absence of the former, the latter is entitled to the fee, but he should resign the patient to the practitioner first engaged.

Article VI.—Of Differences Between Physicians.

SECTION 1. Diversity of opinion and opposition of interests may, in the medical, as in other professions, sometimes occcasion controversy and even contention. When such cases occur and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a *court medical.*

Article VII.—Of Pecuniary Acknowledgments.

SECTION 1. Some general rules should be adopted by the physicians in every town or district relative to pecuniary acknowledgments from patients. These should be adhered to by physicians as uniformly as circumstances will permit. They serve, likewise, as a standard to which appeal may be taken in cases of doubt or dispute.

SEC. 2. Members of the medical profession have been so uniformly in the habit of attending, gratuitously, the indigent sick, and, in general, of answering every call promptly and without a question as to whether they are to receive remuneration therefor, that many persons seem to think they have a right to demand the service of physicians, and do, in fact, call upon them freely, and neglect or refuse to render any pecuniary equivalent, although abundantly able to do so. They impose upon one physician in this way until they have exhausted his patience, and then call upon another; and thus, in the course of a few years, make the circuit of the profession in their neighborhood. It is proper for the physicians of a community to make a list of the names of such individuals, and to demand, before visiting those whose names are on it, adequate security that their *honorarium* will be paid.

PART III.

THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article 1.—Duties of Physicians to the Public.

SECTION 1. As good citizens, it is the duty of physicians to be vigilant for the welfare of the community and to bear their part in sustaining its institutions and burdens. They should be always ready to give counsel to the public in relation to matters appertaining to their *profession*, as, for example, on subjects of medical police, public hygiene and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangements and dietaries of hospitals, asylums, schools, prisons and similar institutions; in relation to the medical police of towns, drainage, ventilation, etc., and in regard to measures for the prevention of epidemic and contagious diseases. And, when pestilence prevails it is their duty to face the danger and to continue their labors for the alleviation of suffering and the saving of life, even at the risk of their own lives.

SEC. 2. Physicians should always be ready, when called on by the proper authorities, to enlighten coroners' inquests and courts of justice on matters strictly medical, such as involve questions relating to insanity, legitimacy, or sudden and violent deaths, and in regard

to the various other subjects embraced in the science of medical jurisprudence. But, in these cases, and especially where they are required to make post-mortem examinations, it is just and right, in consequence of the time, labor and skill required and the responsibility and risk they incur, that the public should award them more than a mere consulting fee.

SEC. 3. There is no profession, by the members of which eleemosynary services are more freely dispensed than they are by physicians; but justice demands that some limits should be placed to the claims upon such offices at their hands. Poverty, professional brotherhood, the benevolent and scantily remunerated occupation of the individual patient, and certain of the public duties referred to in Section 1 of this Article, should always be recognized as presenting valid claims for gratuitous services. But neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, or perform military duty, or to certify to the state of health of parties wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to indigent persons such professional services should always be cheerfully and freely accorded.

Article II.—Obligations of the Public to Physicians.

SECTION 1. The benefit accruing to the public, directly and indirectly, from the active and constant labors and beneficence of the medical profession are so numerous and important that physicians are justly entitled to the utmost consideration from the community. The public ought, likewise, to entertain a just appreciation of the proper qualifications of a practitioner of medicine; to make a due discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education, and not to allow the provisions of their statute books or of the prospectus of their chartered institutions to interpose any obstacles to the attainment of the fullest knowledge of every branch of medical science, or in any way, to restrain the most entire freedom of thought, investigation and action in matters appertaining to the practice of medicine.

OFFICERS OF THE SOCIETY FROM ITS ORGANIZATION TO THE PRESENT TIME.

PRESIDENTS.

1866. J. B. WOOD, M. D.
1867. W. WILLIAMSON, M. D.
1868. C. PRESTON, M. D.
1869. W. WILLIAMSON, M. D.
1870. O. B. GAUSE, M. D.
1871. M. COTE, M. D.
1872. J. H. MARSDEN, M. D.
1873. B. W. JAMES, M. D. (February.)
1873. J. F. COOPER, M. D. (October.)
1874. C. A. STEVENS, M. D.
1875. R. J. McCLATCHEY, M. D.
1876. J. E. JONES, M. D.
1877. J. C. BURGHER, M. D.
1878. H. N. GUERNSEY, M. D.
1879. L. H WILLARD, M. D.
1880. J. K. LEE, M. D.
1881. J. H. McCLELLAND, M. D.
1882. J. C. MORGAN, M. D.
1883. P. DUDLEY, M. D.
1884. W. R. CHILDS, M. D.
1885. J. E. JAMES, M. D.
1886. D. COWLEY, M. D.
1887. A. R. THOMAS, M. D.
1888. HUGH PITCAIRN, M. D.
1889. W. B. TRITES, M. D.
1890. C. F. BINGAMAN, M. D.
1891. AUGUSTUS KORNDOERFER, SR., M. D.
1892. E. C. PARSONS, M. D.
1893. J. C. GUERNSEY, M. D.
1894. C. S. MIDDLETON, M. D.
1895. W. J. MARTIN, M. D.
1896. W. W. VAN BAUN, M. D.
1897. Z. T. MILLER, M. D.
1898. W. H. KEIM, M. D.
1899. B. F. BETTS, M. D.
1900. C. C. RINEHART, M. D.
1901. H. B. WARE, M. D.
1902. R. P. MERCER, M. D.
1903. O. S. HAINES, M. D.
1904. D. C. KLINE, M. D.
1905. W. A. SEIBERT, M. D.
1906. C. P. SEIP, M. D.
1907. J. J. TULLER, M. D.
1908. W. F. EDMUNDSON, M. D.
1909. D. P. MADDUX, M. D.

FIRST VICE-PRESIDENTS.

1866. J. H. P. FROST, M. D.
1867. J. H. MARSDEN, M. D.
1868. H. HOFMAN, M. D.
1870. C. A. STEVENS, M. D.
1871. R. FAULKNER, M. D.
1872. H. N. GUERNSEY, M. D.
1873. M. PRESTON, M. D. (February.)
1873. M. FRIESE, M. D. (October.)
1874. I. LEFEVRE, M. D.
1875. J. E. JONES, M. D.
1876. J. C. BURGHER, M. D.
1877. L. H. WILLARD, M. D.
1878. W. R. CHILDS, M. D.
1879. M. M. WALKER, M. D,
1880. H. DETWILLER, M. D.
1881. B. F. BETTS, M. D.
1882. P. DUDLEY, M. D.
1883. HUGH PITCAIRN, M. D.
1884. C. MOHR, M. D.
1885. D. COWLEY, M. D.
1886. W. H. BIGLER, M. D.
1887. W. J. MARTIN, M. D.
1888. W. B. TRITES, M. D.
1889. C. F. BINGAMAN, M. D.
1890. C. S. MIDDLETON, M. D.
1891. E. C. PARSONS, M. D.
1892. F. R. SCHMUCKER, M. D.
1893. SARAH J. COE, M. D.
1894. Z. T. MILLER, M. D.
1895. M. M. WALKER, M. D.
1896. R. W. McCLELLAND, M. D.
1897. W. H. KEIM, M. D.
1898. H. B. WARE, M. D.
1899. A. P. BOWIE, M. D.
1900. E. H. HILL, M. D.
1901. H. L. NORTHROP, M. D.
1902. W. F. EDMUNDSON, M. D.
1903. W. A. SEIBERT, M. D.
1904. THEO. SURETH, M. D.
1905. C. P. SEIP, M. D.
1906. T. J. GRAMM, M. D.
1907. ANNA JOHNSTON, M. D.
1908. J. M. MAURER, M. D.
1909. E. W. BRICKLEY, M. D.

SECOND VICE-PRESIDENTS.

1866. J. C. BURGHER, M. D.
1867. W. J. BLAKELY, M. D.
1868. J. J. DETWILLER, M. D.
1870. J. H. McCLELLAND, M. D.
1871. H. M. LOGEE, M. D.
1872. S. F. CHARLTON, M. D.
1873. J. C. BURGHER, M. D. (February.)
1873. H. R. FETTERHOFF, M. D. (October.)
1874. W. F. SPETH, M. D.
1875. H. N. MARTIN, M. D.
1876. J. E. JAMES, M. D.
1877. J. E. JAMES, M. D.
1878. A. KORNDŒRFER, SR., M. D.
1879. L. M. ROSSEAU, M. D.
1880. J. W. ALLEN, M. D.
1881. J. J. DETWILLER, M. D.
1882. J. B. WOOD, M. D.
1883. C. F. BINGAMAN, M. D.
1884. H. DETWILLER, M. D.
1885. J. K. LEE, M. D.
1886. J. R. READING, M. D.
1887. EDWARD CRANCH, M. D.
1888. C. F. BINGAMAN, M. D.
1889. JOHN MALIN, M. D.
1890. C. H. LEE, M. D.
1891. M. J. CHAPMAN, M. D.
1892. SARAH J. COE, M. D.
1893. J. L. FERSON, M. D.
1894. ELIZA L. McCLURE, M. D.
1895. A. P. BOWIE, M. D.
1896. E. R. SNADER, M. D.
1897. H. B. WARE, M. D.
1898. EDWARD CRANCH, M. D.
1899. ANNA C. CLARKE, M. D.
1900. R. P. MERCER, M. D.
1901. W. J. MARTIN, M. D.
1902. W. A. SEIBERT, M. D.
1903. THEO. SURETH, M. D.
1904. E. R. GREGG, M. D.
1905. W. G. DIETZ, M. D.
1906. ANNA D. VARNER, M. D.
1907. J. D. BOILEAU, M. D.
1908. F. B. QUACKENBUSH, M. D.
1909. W. A. STEWART, M. D.

RECORDING SECRETARIES.

1866-1872. B. W. JAMES, M. D.
1873-1878. M. M. WALKER, M. D.
1879-1882. Z. T. MILLER, M. D.
1883. T. M. STRONG, M. D.
1884-1885. C. BARTLETT, M. D.
1886-1887. H. F. IVINS, M. D.
1888-1889. J. H. CLOSSON, M. D.
1890-1894. J. R. HORNER, M. D.
1895. E. M. GRAMM, M. D.
1896-1909. G. B. MORELAND, M. D.

CORRESPONDING SECRETARIES.

1866-1872. R. J. McCLATCHEY, M. D.
1873-1875. P. DUDLEY, M. D.
1876-1879. J. C. GUERNSEY, M. D.
1880-1885. R. E. CARUTHERS, M. D.
1886-1888. C. BARTLETT, M. D.
1889-1894. E. R. SNADER, M. D.
1895. J. R. HORNER, M. D.
1896-1909. E. M. GRAMM, M. D.

TREASURERS.

1866. D. COWLEY, M. D.
1867. H. H. HOFMAN, M. D.
1868. W. WILLIAMSON, M. D.
1870. W. J. BLAKELY, M. D.
1871-1873 (February). O. B. GAUSE, M. D.
1873 (October) and 1874. R. J. McCLATCHEY, M. D.
1875-1899. J. F. COOPER, M. D.
1900-1909. ELLA D. GOFF, M. D.

NECROLOGISTS.

1872-1883. W. R. CHILDS, M. D.
1884. M. M. WALKER, M. D.
1885-1889. W. R. CHILDS, M. D.
1895-1896. T. S. DUNNING, M. D.
1890-1894. W. J. MARTIN, M. D.
1897-1901. T. L. BRADFORD, M. D.
1902. J. W. HASSLER, M. D.
1903-1906. C. WEAVER, M. D.
1907-1909. WILLIAM F. BAKER, M. D.

LIST OF MEMBERS.

1899—Adams, T. Louis, M. D., 1831 Chestnut Street, Philadelphia.
1907—Africa, E. S., M. D., 209 Third Street, Warren.
1905—Allen, John V., M. D., 4637 Frankford Avenue, Philadelphia.
1907—Andrews, P. A., M. D., Allentown.
1907—Armor, Russell B., M. D., Crafton.
1907—Arnold, B. G., M. D., Downington.
1899—Arthur, Alexander B., M. D., 2039 Spring Garden Street, Philadelphia.
1899—Artz, Jerome L., M. D., Thirtieth and Westfield Streets, Camden, N. J.
1898—Ashcraft, Leon T., M. D., 2103 Chestnut Street, Philadelphia.
1892—Baier, George F., M. D., Norwood.
1906—Baily, A. W., M. D., 1809 Pacific Avenue, Atlantic City, N. J.
1901—Baker, A. L., M. D., Altoona.
1896—Baker, Albra W., M. D., Third and West Streets, Bloomsburg.
1908—Baker, Lydia Reinhold, M. D., Williamsport.
1906—Baker, William F., M. D., 1425 Spruce Street, Philadelphia.
1905—Bamberger, F. E., M. D., 20 N. Seventh Street, Lebanon.
1905—Barclay, H. B., M. D., Greensburg.
1905—Barker, Walter C., M. D., 2043 Girard Avenue, Philadelphia.
1898—Barnes, Alonzo M., M. D., 3517 N. Broad Street, Philadelphia.
1909—Barratt, Stanley, M. D., Scranton.
1900—Barthmaier, Othmar F., M. D., 2731 N. Fifth Street, Philadelphia.
1905—Bartine, C. W., M. D., 253 W. Hansberry Street, Philadelphia.
1881—BARTLETT, CLARENCE, M. D., 1437 Spruce Street, Philadelphia.
1889—Bayley, Weston D., M. D., 124 S. Sixteenth Street, Philadelphia.
1902—Belville, J. E., M. D., 5915 Green Street, Gtn., Philadelphia.
1900—Benson, Frank C., M. D., 1831 Chestnut Street, Philadelphia.

1904—Bernstein, Ralph, M. D., 37 S. Nineteenth Street, Philadelphia.
1904—Betts, Norman S., M. D., 1609 Girard Avenue, Philadelphia.
1904—Bibighaus, J. R., M. D., Glenside.
1907—Bickley, G. H., M. D., 1429 S. Broad Street, Philadelphia.
1905—Biddle, J. T., M. D., 515 W. Main Street, Monongahela.
1886—BIER, P. A., M. D., 4200 Butler Street, Pittsburgh.
1900—Bierman, H., M. D., Bloomsburg.
1906—Bigelow, W. S., M. D., Phillipsburg.
1906—Bigler, C. Albert, Jr., M. D., 1503 Locust Street, Philadelphia.
1873—BINGAMAN, C. F., M. D., 412 Pittsburgh Life Building, Pittsburgh.
1907—Bittner, Albert J., M. D., Allentown.
1907—Black, James A., M. D., 423 Charles Street, S. S., Pittsburgh.
1905—Blackburn, E. C., M. D., 322 Elmira Street, Williamsport.
1906—Blackledge, Theron L., M. D., 1221 Third Avenue, New Brighton.
1906—Blair, Alexander O., M. D., Stevenson Building, Pittsburgh.
1892—Blair, W. W., M. D., 400 Penn Avenue, Pittsburgh.
1904—Blake, Eva N., M. D., 190 Maplewood Avenue, Philadelphia.
1898—Boericke, Felix A., M. D., 1011 Arch Street, Philadelphia.
1908—Boericke, Oscar E., M. D., 2015 Wallace Street, Philadelphia.
1905—Bohn, Daniel, M. D., 1021 Seventh Avenue, Altoona.
1892—Boileau, John D., M. D., 804 W. Lehigh Avenue, Philadelphia.
1905—Bolsinger, P. L., M. D., 533 Locust Street, Johnstown.
1908—Bomberger, W. E. J., M. D., 1446 Market Street, Harrisburg.
1904—Boone, G. H., M. D., Pottsville.
1872—BOWIE, A. P., M. D., 702 First National Bank Building, Uniontown.
1882—BOYER, FRANCIS W., M. D., 217 Mahantongo Street, Pottsville.
1907—Bradford, G. M., M. D., Mt. Morris.
1906—Bradford, Thomas Lindsley, M. D., 1862 Frankford Avenue, Philadelphia.

1904—Bradley, Thomas B., M. D., 2009 Chestnut Street, Philadelphia.
1883—BRANSON, MARY, M. D., 1504 Locust Street, Philadelphia.
1906—Brewster, F. D., M. D., 309 Jefferson Avenue, Scranton.
1898—Brickley, E. W., M. D., York.
1907—Briggs, H. G., M. D., 704 Bessemer Building, Pittsburgh.
1909—Brooke, J. A., M. D., Wilkes-Barre.
1904—Brooks, Charles M., M. D., 1409 N. Fifteenth Street, Philadelphia.
1905—Brose, George W., M. D., 417 W. Market Street, York.
1906—Brown, C. Sheble, M. D., 3046 Frankford Avenue, Philadelphia.
1905—Brown, L. S., M. D., Pittsburg Life Building, Pittsburgh.
1894—Brown, S. G. A., M. D., Shippensburg.
1905—Browne, William C., M. D., Burnside.
1904—Brownell, C. M., M. D., Stroudsburg.
1893—Bryson, H. Ballou, M. D., 312 Pittsburgh Life Building, Pittsburgh.
1880—BULICK, T. M., M. D., 317 N. Second Street, Harrisburg.
1877—BULLARD, J. A., M. D., 200 S. Franklin Street, Wilkes-Barre.
1881—BUNTING, H. M., M. D., 521 Swede Street, Norristown.
1907—Burnite, J. T., M. D., Brownsville.
1905—Byer, J. M., M. D., Bustleton.
1907—Caldwell, Charles S., M. D., 2219 Woodstock Avenue, Swissvale.
1906—Calhoun, John C., M. D., 904 Western Avenue, Allegheny.
1907—Carmalt, Horace G., M. D., 333 Grandview Avenue, Pittsburgh.
1888—CARMICHAEL, T. H., M. D., 7127 Germantown Avenue, Philadelphia.
1897—Carter, Woodward D., M. D., 1315 S. Broad Street, Philadelphia.
1906—Casselberry, R. C., M. D., 700 Madison Street, Chester.
1898—Challinor, S. Boyd., M. D., 3619 Forbes Street, Pittsburgh.
1905—Champlin, H. W., M. D., Walters Park.

1905—Chantler, I. B., M. D., 537 Beaver Street, Sewickley.
1875—CHAPMAN, MILLIE J., M. D., Springboro.
1900—Chase, Theodore L., M. D., 1604 Walnut Street, Philadelphia.
1905—Cheesman, Walter C., M. D., 211 N. Fifty-second Street, Philadelphia.
1906—Chisolm, H. C., M. D., 528 Penn Street, Huntingdon.
1905—Christy, Daniel, M. D., Millvale.
1906—Clark, Edward P., M. D., 5801 Fifth Avenue, Pittsburgh.
1902—Clark, Ernest L., M. D., Media.
1889—Clarke, Anna C., M. D., 320 Jefferson Avenue, Scranton.
1908—Clawson, F. A., M. D., Meadville.
1908—Clay, Joseph V. T., M. D., 2138 S. Fifteenth Street, Philadelphia.
1905—Clifford, Joseph B., M. D., McKeesport.
1886—CLOSSON, J. H., M. D., 53 W. Chelten Avenue, Germantown, Philadelphia.
1908—Cloud, Charles H., M. D., 14 N. Sixtieth Street, Philadelphia.
1907—Coffin, Mary E., M. D., 3823 California Avenue, Allegheny.
1906—Cook, W. C., M. D., Fulton Building, Pittsburg.
1894—Cooke, Mary A., M. D., 2113 N. Eighteenth Street, Philadelphia.
1907—Cooper, George M., M. D., 1803 Chestnut Street, Philadelphia.
1901—Cooper, R. C., M. D., 1111 Federal Street, Allegheny.
1895—Cooper, William H., M. D., Oakmont.
1909—Cornish, Mark H., M. D., Sharon Hill.
1909—Craig, John P., M. D., Chester.
1882—CRANCH, EDWARD, M. D., 109 W. Ninth Street, Erie.
1904—Crandell, Frank Foster, M. D., Turtle Creek.
1907—Crawford, J. J., M. D., Coraopolis.
1885—CROWTHER, ISAAC, M. D., 700 Madison Street, Chester.
1905—Culin, William D., M. D., 820 N. Forty-first Street, Philadelphia.
1909—Cuthbert, E. P., M. D., Evans City.
1907—Davies, L. E., M. D., Nazareth.
1906—Dean, H. G., M. D., New Castle.
1906—Dehoff, J. W., M. D., 480 W. Market Street, York.

1906—Deming, Ralph, M. D., 1613 N. Thirteenth Street, Philadelphia.
1908—Detweiler, A. H., M. D., Schuylkill Haven.
1866—DETWILLER, JOHN J., M. D., 52 Centre Square, Easton.
1907—Detwiller, William K., M. D., Easton.
1903—De Witt, G. M., M. D., Board of Trade Building, Scranton.
1908—Dicks, J. Oscar, M. D., West Chester.
1905—Diehl, Reuben O., M. D., Manheim.
1886—DIETZ, W. G., M. D., 21 N. Vine Street, Hazleton.
1878—DINSMORE, S. W. S., M. D., 60 N. Main Street, Sharpsburg.
1909—Doan, Edward H., M. D., Newtown.
1907—Douds, E. H., M. D., Beaver Falls.
1907—Douglass, John P., M. D., McDonald.
1904—Doyle, William Francis, M. D., Pottsville.
1891—Drake, J. C. Merle, M. D., 720 Sassafrass Street, Erie.
1905—Dreher, C. B., M. D., Tamaqua.
1908—Dreher, Edward C., M. D., 114 Academy Street, Wilkes-Barre.
1907—Dreibelis, S. Leon, M. D., Reading.
1908—Dunne, H. E., M. D., Ridgway.
1906—Dunning, T. S., M. D., 1328 N. Fifteenth Street, Philadelphia.
1907—Dunning, T. Snively, M. D., Columbia.
1907—Dye, Adelbert D., M. D., 250 Pine Street, Williamsport.
1909—Eaches, W. DeHaven, M. D., Phoenixville.
1906—Ealer, Percy H., M. D., 2027 Spring Garden Street, Philadelphia.
1907—Eberhard, Harry M., M. D., 1710 N. Eighteenth Street, Philadelphia.
1873—EDMUNDSON, W. F., M. D., 3509 Fifth Avenue, Pittsburgh.
1907—Edwards, H. R., M. D., Shady and Marshall Avenues, Pittsburgh.
1908—Ege, John, M. D., 142 N. Eighth Street, Reading.
1901—Elliott, J. D., M. D., 1421 Spruce Street, Philadelphia.
1909—Ely, W. F., M. D., Lansford.
1904—Ervin, J. H., M. D., Jenkintown.

1905—Erwin, William, M. D., 4844 Cedar Avenue, Philadelphia.
1909—Ewing, R. R., M. D., Sheffield.
1906—Farrington, E. A., M. D., Haddonfield, N. J.
1904—Fehr, H. A., M. D., Allentown.
1905—Fisher, G. S., M. D., 517 N. Seventh Street, Lebanon.
1906—Fischer, J. A., M. D., 505 Green Street, Philadelphia.
1909—Fitz-Gerald, David E., M. D., 3468 Frankford Avenue, Philadelphia.
1904—Fleagle, Maurice M., M. D., Hanover.
1907—Fleming, R. K., M. D., 315 S. Highland Avenue, Pittsburgh.
1907—Focht, G. M., M. D., Lebanon.
1905—Follmer, W. H., M. D., Milton.
1907—Forrest, F. B., M. D., Bellwood.
1906—Fox, Charles D., M. D., 2126 Pine Street, Philadelphia.
1906—Frank, J. W., M. D., 114 N. Seventeenth Street, Philadelphia.
1907—Frosch, Frank J., M. D., 2016 N. Fifth Street, Philadelphia.
1905—Fulmer, Charles R., M. D., 1211 W. Allegheny Avenue, Philadelphia.
1902—Furman, Horace S., M. D., 1705 Tioga Street, Philadelphia.
1905—Gaggin, Verner S., M. D., 5128 Liberty Avenue, Pittsburgh.
1906—Gallagher, Michael F., M. D., 1514 N. Eighteenth Street, Philadelphia.
1907—Gangloff, Harry M., M. D., Uniontown.
1898—Gann, G. W., M. D., Du Bois.
1907—Gans, Robert A., M. D., Connellsville.
1904—Garis, Frank A., M. D., 316 W. Broad Street, Bethlehem.
1904—Garner, Albert Rowland, M. D., 526 De Kalb Street, Norristown.
1907—Gaston, John C., M. D., 1402 Sixth Avenue, Beaver Falls.
1907—Gates, Alfred, M. D., Lebanon.
1901—Gates, W. D., M. D., Indiana .
1904—Gay, H. M., M. D., 1687 N. Fifty-fourth Street, Philadelphia.
1907—Geddes, C. P., M. D., Washington.
1906—Gerberich, D. P., M. D., Lebanon.
1908—Gerberich, Guy A., M. D., Lebanon.
1908—Gerberich, H. L., M. D., Lebanon.
1886—GERHART, JOSEPH M., M. D., 1127 Mt. Vernon Street, Philadelphia.

1904—Gerhart, Weber L., M. D., 36 S. Third Street, Lewisburg.
1907—Getze, George W., M. D., Tarentum.
1908—Gieser, W. R., M. D., 832 N. Fifth Street, Philadelphia.
1907—Gifford, Edward F., M. D., 221 W. Eighth Street, Erie.
1891—Gilbert, Irwin B., M. D., 2027 Columbia Avenue, Philadelphia.
1894—Gittens, Theodore P., M. D., 1716 Diamond Street, Philadelphia.
1905—Gladwin, F. E., M. D., 2204 N. Seventeenth Street, Philadelphia.
1908—Glenn, Edwin A., M. D., Second and Chestnut Streets, Berwick.
1891—Goff, Ella D., M. D., Library Place, N. Diamond Street, E. Allegheny.
1903—Golden, G. Morris, M. D., 1449 Venango Street, Philadelphia.
1907—Goodsell, J. W., M. D., New Kensington.
1900—Gowlus, Henry L., M. D., 655 N. Thirteenth Street, Philadelphia.
1883—GRAMM, EDWARD M., M. D., 1833 Chestnut Street, Philadelphia.
1883—GRAMM, THEODORE J., M. D., 846 N. Broad Street, Philadelphia.
1909—Gray, J. R. T., Jr., M. D., Chester.
1904—Gray, T. C., M. D., Easton.
1895—Gregg, Edward R., M. D., 334 S. Highland Avenue, Pittsburgh.
1905—Greno, R. M., M. D., Arnold.
1905—Griffith, J. B., M. D., 48 Chestnut Street, Lewistown.
1888—GRIFFITH, LOUIS B., M. D., 2449 Columbia Avenue, Philadelphia.
1905—Griggs, William B., M. D., 1449 N. Tenth Street, Philadelphia.
1874—GUERNSEY, J. C., M. D., 1923 Chestnut Street, Philadelphia.
1894—Haas, George H., M. D., 121 N. Eighth Street, Allentown.
1909—Haines, Edward Steel, M. D., Rutledge.
1909—Haines, J. Burton, M. D., Prospect Park, Moore.

1885—HAINES, O. S., M. D., 137 N. Fifteenth Street, Philadelphia.
1907—Haman, Charles R., M. D., Reading.
1887—HAMAN, W. A., M. D., 122 N. Eighth Street, Reading.
1906—Hamilton, Samuel, Jr., M. D., 5601 Stanton Avenue, Pittsburgh.
1908—Hammond, Nathan B., M. D., 49 N. Fifty-second Street, Philadelphia.
1904—Hammond, W. Nelson, M. D., 1424 Poplar Street, Philadelphia.
1909—Hanley, Clare H., M. D., Scranton.
1899—Harner, D. W., M. D., 1930 Chestnut Street, Philadelphia.
1891—Harpel, F. E., M. D., 211 Ferry Street, Danville.
1904—Harpel, G. W., M. D., Third and Maple Streets, Mt. Carmel.
1884—HARRIS, D. R., M. D., 41 N. Jefferson Street, New Castle.
1906—Hartley, Arthur, M. D., 2101 Susquehanna Avenue, Philadelphia.
1904—Hartman, G. Willis, M. D., 1207 N. Third Street, Harrisburg.
1883—HASSLER, W. A., M. D., 105 N. Eighth Street, Allentown.
1895—Heilner, H. F., M. D., Burr Building, Scranton.
1905—Heimbach, A. E., M. D., Renovo.
1905—Heimbach, J. M., M. D., Kane.
1907—Hemington, J. G., M. D., Uniontown.
1899—Hendrixson, Lewis H., M. D., New Holland.
1892—Heritage, A. C., M. D., Jenkintown.
1904—Heritage, J. B., M. D., Langhorne.
1904—Hess, H. P., M. D., Pine Grove.
1902—Heysinger, Isaac W., M. D., 1521 Poplar Street, Philadelphia.
1892—Hill, E. H., M. D., Pittston.
1909—Hill, R. Franklin, M. D., Hahnemann Hospital, Philadelphia.
1906—Hillegas, William M., M. D., 1001 Belmont Avenue, Philadelphia.
1882—HOFFMAN, C. H., M. D., 510 S. Highland Avenue, Pittsburgh.
1903—Holben, Malcolm D., M. D., Slatington.
1883—HOLBEN, M. J., M. D., Slatington.

1905—Holcombe, William B., M. D., 1509 Girard Avenue, Philadelphia.
1905—Hollowell, James, M. D., Parkesburg.
1906—Holsberg, W. H., M. D., 927 Cumberland Street, Lebanon.
1904—Hood, Joseph R., M. D., Sewickley.
1906—Harnecker, J. C., M. D., 3813 Forbes Avenue, Pittsburgh.
1908—Howell, Ellen E. Woodward, M. D., 254 S. Sixteenth Street, Philadelphia.
1904—Howell, Frederick E., M. D., 220 N. Fifth Street, Reading.
1905—Huber, W. H., M. D., Edge Hill.
1905—Humes, James R., M. D., Hollidaysburg.
1905—Humes, John H., M. D., Hollidaysburg.
1904—Humphreys, E., M. D., 131 N. Fifteenth Street, Philadelphia.
1905—Hunsicker, William C., M. D., 201 N. Seventeenth Street, Philadelphia.
1905—Huston, Arthur F. P., M. D., 407 Taylor Avenue, N. S., Pittsburgh.
1906—Imes, Thomas C., M. D., 518 S. Fifteenth Street, Philadelphia.
1886—INGERSOLL, W. K., M. D., 4008 Chestnut Street, Philadelphia.
1907—Insley, William W., M. D., Donora.
1907—Jackson, Frank B., M. D., 15 W. First Street, Oil City.
1903—James, D. B., M. D., 1819 Chestnut Street, Philadelphia.
1867—JAMES, JOHN E., M. D., 1521 Arch Street, Philadelphia.
1902—James, John Edwin, Jr., M. D., 1819 Chestnut Street, Philadelphia.
1906—Jamison, M. R., M. D., Greensburg.
1881—JOHNSON, THEODORE M., M. D., 200 Susquehanna Avenue, Pittston.
1901—Johnston, Anna, M. D., 5016 Liberty Avenue, Pittsburgh.
1905—Johnston, J. E., M. D., 7035 Hamilton Avenue, Pittsburgh.
1908—Karsner, Charles W., M. D., 1320 S. Broad Street, Philadelphia.
1889—Kase, Edmund H., M. D., 1325 Girard Avenue, Philadelphia.
1891—Kaufman, John, M. D., Hazleton.
1905—Kauffman, A. B., M. D., 28 E. Walnut Street, Lancaster.

1885—KEIM, WILLIAM H., M. D., 1716 N. Eighteenth Street, Philadelphia.
1905—Keller, J. D., M. D., 139 Carlisle Street, Hanover.
1909—Kelsey, Joel S., Jr., M. D., Homœopathic Hospital, Pittsburgh.
1909—Kennedy, W. D., M. D., Lansdowne.
1909—Kenworthy, J. M., M. D., Media.
1905—Kessler, H. D., M. D., Altoona.
1904—Kiefer, J. D., M. D., Mt. Carmel.
1907—Kieffer, W. J., M. D., 373 N. Eighth Street, Lebanon.
1908—Killian, W. T., M. D., 5615 Wyalusing Avenue, Philadelphia.
1901—Kinney, C. Spencer, M. D., Easton.
1906—Kistler, A. L., M. D., N. E. corner Ninth and Linden Streets, Allentown.
1908—Kistler, D. S., M. D., 307 S. Franklin Street, Wilkes-Barre.
1904—Kistler, Grant M., M. D., Lansford.
1904—Kistler, Horace E., M. D., 313 Main Street, Johnstown.
1909—Kistler, John D., M. D., Homœopathic Hospital, Pittsburgh.
1904—Kistler, J. S., M. D., Shenandoah.
1904—Kistler, M. S., M. D., Shenandoah.
1905—Kistler, Seth W., M. D., Nanticoke.
1904—Kistler, W. F., M. D., Minersville.
1909—Kistler, William Earl, M. D., Hahnemann Hospital, Philadelphia.
1891—Kline, D. C., M. D., Fifth and Chestnut Streets, Reading.
1908—Klock, E. L., M. D., Orwigsburg.
1908—Klock, Joseph V., M. D., Mahanoy City.
1906—Knerr, Bayard, M. D., 1137 Spruce Street, Philadelphia.
1877—KNERR, C. B., M. D., 1137 Spruce Street, Philadelphia.
1907—Knerr, Levi J., M. D., 3607 Walnut Street, Philadelphia.
1907—Koons, F. W., M. D., 331 Grandview Avenue, Pittsburgh.
1872—KORNDŒRFER, AUGUSTUS, SR., M. D., 1728 Green Street, Philadelphia.
1896—Korndœrfer, Augustus, Jr., M. D., 142 N. Eighteenth Street, Philadelphia.
1900—Kreider, J. H., M. D., Lykens.
1900—Kressley, J. A., M. D., New Tripoli.
1896—Krusen, Edward A., M. D., 409 Cherry Street, Norristown.

1905—Lacy, Henry A., M. D., 743 N. Seventeenth Street, Philadelphia.
1908—Landis, D. M., M. D., Perkasie.
1903—Lane, Nathaniel F., M. D., 1620 Green Street, Philadelphia.
1907—Lawrence, Frank H., M. D., 1518 Perkiomen Avenue, Reading.
1888—LAYMAN, ALFRED, M. D., 1630 N. Eighteenth Street, Philadelphia.
1907—Leas, F. C., M. D., 400 S. Fortieth Street, Philadelphia.
1905—Leopold, H. P., M. D., 1829 Chestnut Street, Philadelphia.
1909—Leopold, R. S., M. D., 332 W. Chelten Avenue, Philadelphia.
1905—Leslie, Edward C., M. D., 5709 Penn Avenue, Pittsburgh.
1905—Levis, George E., M. D., 1746 Orthodox Street, Philadelphia.
1907—Lewis, Margaret C., M. D., 4027 Spring Garden Street, Philadelphia.
1894—Lichtenwalner, A. B., M. D., 2435 N. Seventh Street, Philadelphia.
1906—Livingston, M. W., M. D., Latrobe.
1905—Locke, M. J., M. D., Bellefonte.
1907—Long, Howard W., M. D., 1534 W. Lehigh Avenue, Philadelphia.
1905—Longwell, Demerest W., M. D., Tioga.
1904—Longwell, J. P., M. D., Wellsboro.
1904—Loos, Julia C., M. D., 30 N. Second Street, Harrisburg.
1868—MACFARLAN, MALCOLM, M. D., 1805 Chestnut Street, Philadelphia.
1908—Mackenzie, G. W., M. D., 1833 Chestnut Street, Philadelphia.
1886—MADDUX, D. P., M. D., 801 Madison Street, Chester.
1906—Malin, William H., M. D., 8408 Germantown Avenue, Chestnut Hill, Philadelphia.
1905—Mann, S. S., M. D., Columbia.
1906—Mansfield, Harry K., M. D., 19 W. Chelten Avenue, Germantown, Philadelphia.
1881—MANSFIELD, J. R., M. D., 5620 Germantown Avenue, Philadelphia.
1904—Mantz, E. S., M. D., South Bethlehem.
1906—Marks, William F., M. D., 118 N. Ninth Street, Reading.
1906—Marsden, Biddle R., M. D., Chestnut Hill, Philadelphia.

1883—MARSHALL, ANNA M., M. D., 1437 Chestnut Street, Philadelphia.
1891—Marshall, R. S., M. D., 424 Shady Avenue, Pittsburgh.
1905—Marshall, Watson, M. D., Diamond Bank Building, Pittsburgh.
1906—Martin, W. Joline, M. D., 553 Trenton Avenue, Wilkinsburg.
1905—Massey, Franklin F., M. D., Womelsdorf.
1904—Matlack, Thomas, M. D., 2356 E. York Street, Philadelphia.
1907—Maurer, E. H., M. D., Ashland.
1878—MAURER, J. M., M. D., 97 W. Wheeling Street, Washington.
1909—Mauser, H. S., M. D., Scranton.
1907—Maust, George W., M. D., Lock Haven.
1907—McBride, L. E., M. D., Franklin.
1905—McCauley, E. S. H., M. D., Beaver.
1891—McCauley, J. C., M. D., 128 Connecticut Street, Rochester.
1879—McCLELLAND, J. B., M. D., 409 Penn Avenue, Pittsburgh.
1867—McCLELLAND, J. H., M. D., Fifth and Wilkins Avenue, Pittsburgh.
1884—McCLELLAND, R. W., M. D., Fifth and Wilkins Avenue, Pittsburgh.
1883—McCLURE, ELIZA H. LANG, M. D., 1919 Wallace Street, Philadelphia.
1893—McCracken, William, M. D., 209 St. Clair Street, South Pittsburgh.
1903—McDowell, A. S., M. D., 155 N. Fifth Street, Reading.
1907—McEldowney, J., M. D., 4939 Catharine Street, Philadelphia.
1906—Mercer, Edward W., M. D., 1705 Arch Street, Philadelphia.
1871—MERCER, ROBERT P., M. D., 223 W. Third Street, Chester.
1905—Mercer, Warren C., M. D., 1705 Arch Street, Philadelphia.
1907—Merkel, George A., M. D., Minersville.
1896—Merrell, A. F., M. D., Hallstead.
1907—Merrill, Benjamin E., M. D., Dent's Run.
1905—Metzger, Irwin D., M. D., Tyrone.
1871—MIDDLETON, CALEB S., M. D., 1523 Girard Avenue, Philadelphia.
1904—Miller, C. R., M. D., 198 S. Second Street, Steelton.

1904—Miller, M. L., M. D., Mohnton.
1905—Miller, Seth S., M. D., Susquehanna.
1887—MILLER, Z. T., M. D., 2023 Carson Street, S. S., Pittsburgh.
1900—Minahan, Thomas, M. D., Carnegie.
1906—Monroe, J. E., M. D., Orange, Mass.
1893—Moon, S. B., M. D., 204 Lexington Avenue, Pittsburgh.
1901—Moore, J. E., M. D., 319 Main Avenue, Carnegie.
1893—Moreland, George B., M. D., Keenan Building, Liberty Avenue and Seventh Street, Pittsburgh.
1908—Morozzi, A. C., M. D., Honey Brook.
1906—Morris, Frederick S., M. D., Homœopathic Hospital, Pittsburgh.
1901—Morrow, Emory H., M. D., Altoona.
1908—Moyer, S. C., M. D., Lansdale.
1908—Moyer, William G., M. D., Quakertown.
1891—Mueller, G. A., M. D., Empire Building, Liberty Avenue and Fifth Street, Pittsburgh.
1906—Muhly, Edward G., M. D., 1627 S. Sixth Street, Philadelphia.
1908—Mumford, Mary D., M. D., Meadville.
1888—MURDOCK, ROBERT, M. D., 160 S. Main Street, Wilkes-Barre.
1907—Murphy, John, M. D., Loretta.
1901—Muth, F. L., M. D., Wilmerding.
1894—Myers, Charles Elwood, M. D., 170 Green Lane, Manayunk, Philadelphia.
1907—Nesbit, Edwin L., M. D., Bryn Mawr.
1908—Neumuller, M. H., M. D., Lansford.
1904—Nicholson, Harland C., M. D., 2000 Wallace Street, Philadelphia.
1907—Nicholson, H. S., M. D., 1002 Empire Building, Pittsburgh.
1893—Northrop, H. L., M. D., Flanders Building, Fifteenth and Walnut Streets, Philadelphia.
1905—Nuss, W. W., M. D., Wissinoming, Philadelphia.
1907—Osborn, James A., M. D., 130 S. Front Street, Milton.
1906—Palen, Gilbert J., M. D., 1831 Chestnut Street, Philadelphia.
1896—Palmer, Charles R., M. D., West Chester.
1904—Palmer, Wayland R., M. D., Hollidaysburg.

1906—Parker, G. W., M. D., 5030 Market Street, Philadelphia.
1881—PARSONS, E. C., M. D., 275 Walnut Street, Meadville.
1897—Paxson, O. H., M. D., 1729 Arch Street, Philadelphia.
1909—Paxson, R. Randolph, M. D., Hulmeville.
1900—Peck, John L., M. D., 524 Vine Street, Scranton.
1881—PERKINS, C. W., M. D., 403 Broad Street, Chester.
1908—Perkins, Roscoe L., M. D., 1207 N. Third Street, Harrisburg.
1907—Peterman, J. F., M. D., 523 Cumberland Street, Lebanon.
1908—Peters, Byron M., M. D., Jenkintown.
1908—Peters, W. C., M. D., State Street, Harrisburg.
1883—PETINGILL, ELIZA F., M. D., 300 N. Tenth Street, Philadelphia.
1891—Phillips, Joseph R., M. D., 15 E. Eighth Street, Erie.
1906—Pierce, Ward I., M. D., Diamond Bank Building, Pittsburgh.
1908—Pines, J. Darwin, M. D., 2123 N. Nineteenth Street, Philadelphia.
1897—Piper, R. L., M. D., Tyrone.
1905—Piper, William Scott, M. D., Clearfield.
1880—PITCAIRN, HUGH, M. D., 206 State Street, Harrisburg.
1907—Platt, Charles, M. D., 3612 Baring Street, Philadelphia.
1906—Pond, Edward H., M. D., 902 Keenan Building, Liberty Avenue and Seventh Street, Pittsburgh.
1886—POSEY, L. P., M. D., 1807 Walnut Street, Philadelphia.
1896—Powel, Franklin, M. D., Madison and Fifth Streets, Chester.
1907—Powell, Howard, M. D., Glenside.
1883—POWELL, W. C., Jr., M. D., Bryn Mawr.
1909—Pratt, John S. M., M. D., Coatesville.
1909—Pratt, John W., M. D., Coatesville.
1871—PRATT, TRIMBLE, M. D., 31 E. Washington Street, Media.
1909—Preston, J. F., M. D., Chester.
1907—Price, D. J., M. D., Shenandoah.
1900—Prizer, E. T., M. D., Lancaster.
1907—Proctor, W. M., M. D., Braddock.
1896—Pursell, James P., M. D., Sellersville.
1904—Quackenbush, F. B., M. D., 4700 Chester Avenue, Philadelphia.
1906—Ramsey, H. E., M. D., 3715 California Avenue, Pittsburgh.

1897—Raue, C. Sigmund, M. D., 1626 Walnut Street, Philadelphia.
1906—Reading, J. H., M. D., 1811 Green Street, Philadelphia.
1906—Reading, L. W., M. D., 1629 Green, Street, Philadelphia.
1888—READING, THOMAS, M. D., Hatboro.
1896—Redman, John L., M. D., 1336 Spruce Street, Philadelphia.
1906—Reeves, Joseph M., M. D., 1525 Spruce Street, Philadelphia.
1905—Reich, George R., M. D., Marietta.
1908—Reily, W. Edgar, M. D., Clearfield.
1907—Reinhold, Hannah C., M. D., 761 W. Fourth Street, Williamsport.
1908—Reith, John W., M. D., 234 W. Chestnut Street, Lancaster.
1904—Reitz, J. J., M. D., Walnutport.
1905—Rhodes, C. M., M. D., 914 N. Sixth Street, Harrisburg.
1908—Rhodes, Henry H., M. D., Middletown.
1908—Rice, Robert, M. D., Crozer Hospital, Chester.
1904—Richards, Charles M., M. D., 13 N. Ninth Street, Reading.
1905—Richards, F. L., M. D., Mt. Joy.
1908—Richtstine, F. B., M. D., Sunbury.
1896—Ridge, Jonathan T., M. D., 1617 N. Seventh Street, Philadelphia.
1909—Ridgway, Mary Davis, M. D., 5348 Wayne Avenue, Philadelphia.
1907—Riegel, A. J., M. D., 368 N. Eighth Street, Lebanon.
1908—Rieger, Charles L. W., M. D., 1304 Rockland Street, Logan, Philadelphia.
1878—RINEHART, C. C., M. D., 4637 Centre Avenue, Pittsburgh.
1907—Rittenhouse, J. S., M. D., Reading.
1909—Roberts, F. W., M. D., Plymouth.
1909—Roberts, Louis D., M. D., Scranton.
1907—Robinson, Walter P., M. D., Homœopathic Hospital, Pittsburgh.
1908—Robinsteen, Carl H., M. D., Homœopathic Hospital, Pittsburgh.
1904—Rochester, J. R., M. D., 863 N. Seventh Street, Philadelphia.
1906—Roman, Desiderio, M. D., 1429 Poplar Street, Philadelphia.
1905—Rosenberger, Henry D., M. D., Manheim.
1908—Rossiter, E. B., M. D., Pottstown.
1905—Roth, William F., M. D., Wilkes-Barre.

1894—Rotzell, W. E., M. D., 5917 Lansdowne Avenue, Philadelphia.
1907—Rowland, John F., M. D., 430 N. Fifty-second Street, Philadelphia.
1909—Russell, Antoinette E. C., M. D., 5348 Wayne Avenue, Philadelphia.
1907—Sager, C. W., M. D., Titusville.
1906—Sample, Clyde W., M. D., 813 Wood Street, Wilkinsburg.
1888—SANDEL, J. H., M. D., 49 Centre Avenue, Plymouth.
1905—Sanderson, H. H., M. D., Johnstown.
1906—Sankey, B. E., M. D., 54 N. Jefferson Street, New Castle.
1907—Sappington, S. W., M. D., 1826 N. Thirteenth Street, Philadelphia.
1872—SARTAIN, HARRIET J., M. D., 212 W. Logan Square, Philadelphia.
1901—Sawers, F. C., M. D., 5130 Second Avenue, Pittsburgh.
1896—Schantz, Henry F., M. D., 402 N. Fifth Street, Reading.
1892—Schantz, M. Hassler, M. D., 402 N. Fifth Street, Reading.
1908—Schofield, James D., M. D., Roxborough, Philadelphia.
1883—SCHREINER, EMMA T., M. D., 190 Maplewood Avenue, Philadelphia.
1886—SEIBERT, W. A., M. D., 43 N. Fourth Street, Easton.
1900—Seibert, Walter W., M. D., 43 N. Fourth Street, Easton.
1907—Seidel, F. W., M. D., 372 Front Street, Reading.
1868—SEIP, C. P., M. D., 316 N. Highland Avenue, Pittsburgh.
1905—Seip, Herman H., M. D., 316 N. Highland Avenue, Pittsburgh.
1905—Seitz, W. C., M. D., Glen Rock.
1906—Shallcross, I. G., M. D., 1631 Arch Street, Philadelphia.
1906—Shannon, S. F., M. D., 603 N. Fifty-second Street, Philadelphia.
1905—Sharbaugh, W. J., M. D., 607 Twenty-fourth Street, Altoona.
1885—SHELLENBERGER, C. N., M. D., First National Bank Building, Colorado Springs, Colo.
1907—Shepard, Warren B., M. D., Homœopathic Hospital, Pittsburgh.
1905—Shower, John A., M. D., 104 S. Beaver Street, York.
1903—Shute, A. Clement, M. D., 421 High Street, Pottstown.
1908—Sierer, A. L., M. D., Mechanicsburg, R. F. D. No. 1.

1900—Simmons, C. W., M. D., 1628 N. Eighteenth Street, Philadelphia.
1897—Simmons, S. S., M. D., Susquehanna.
1905—Simpson, K. S., M. D., Carnegie.
1906—Sloan, Malachi W., M. D., 4825 Baltimore Avenue, Philadelphia.
1883—SLOUGH, F. J., M. D., 120 N. Eighth Street, Allentown.
1907—Slough, W. C. J., M. D., Emaus.
1908—Small, Standley G., M. D., N. S., Pittsburgh.
1892—Smedley, Charles D., M. D., Wayne.
1907—Smith, Clarence R., M. D., 6338 Woodbine Avenue, Philadelphia.
1908—Smith, E. B., M. D., Union City.
1907—Smith, Frederick W., M. D., 1430 Wolfe Street, Philadelphia.
1889—Smith, George W., M. D., 806 N. Broad Street, Philadelphia.
1900—Snyder, E. S., M. D., Lancaster.
1904—Snyder, L. A., M. D., Ashland.
1894—Somerville, W. H., M. D., 1214 E. Columbia Avenue, Philadelphia.
1896—Spahr, Charles E., M. D., 10 W. Market Street, York.
1904—Speakman, William W., M. D., 1831 Chestnut Street, Philadelphia.
1889—Spencer, William, M. D., 1623 Walnut Street, Philadelphia.
1907—Sperling, F. J. E., M. D., Wilkes-Barre.
1907—Sperling, John G., M. D., Wilkes-Barre,
1881—STAMBACH, H. L., M. D., 15 W. Victoria Street, Santa Barbara, Cal.
1906—Statler, Edgar C., M. D., 461 Linden Street, Allentown.
1908—Stauffer, Annie W., M. D., 1516 Montgomery Avenue, Philadelphia.
1907—Steckel, Ellwood K., M. D., Orwigsburg.
1905—Steele, William, Jr., M. D., 2340 N. Thirteenth Street, Philadelphia.
1906—Stegmenn, Charles W., M. D., 4634 E. Thompson Street, Philadelphia.
1906—Steinmetz, Deacon, M. D., 1835 N. Seventeenth Street, Philadelphia.

1907—Stephens, T. W., M. D., 814 Wood Street, Wilkinsburg.
1891—Stephens, W. R., M. D., 814 Wood Street, Wilkinsburg.
1904—Sterner, L. H., M. D., Porter's Sideling.
1894—Stewart, G. W., M. D., 1823 Chestnut Street, Philadelphia.
1903—Stewart, William A., M. D., Lang and Thomas Avenues, Pittsburgh.
1901—Stitzel, J. W., M. D., Hollidaysburg.
1906—Stokes, Lydia W., M. D., 1719 Arch Street, Philadelphia.
1904—Straub, D. W., M. D., Bethlehem.
1904—Straub, E. L., M. D., Minersville.
1907—Straube, Rudolph, M. D., 2822 Girard Avenue, Philadelphia.
1907—Strayer, Robert F., M. D., 201 W. Market Street, York.
1905—Strock, Henry B., M. D., Bedford.
1885—STRONG, J. WILMER, M. D., 2049 N. Thirteenth Street, Philadelphia.
1889—Strong, Walter, M. D., 2105 N. Thirteenth Street, Philadelphia.
1904—Summers, Robert S., M. D., 2610 N. Twelfth Street, Philadelphia.
1907—Sunanday, F. W., M. D., Bernharts P. O.
1904—Super, A. H., M. D., Tamaqua.
1896—Sureth, Theodore, M. D., 1821 N. Main Avenue, Scranton.
1905—Sutton, John C., M. D., 1231 Third Avenue, New Brighton.
1904—Swalm, T. W., M. D., Pottsville.
1906—Swartz, J. Ross, M. D., Harrisburg.
1906—Swick, J. Howard, M. D., Beaver Falls.
1908—Sylvis, William M., M. D., 1726 S. Broad Street, Philadelphia.
1901—Taylor, Amos O., M. D., 1415 Twelfth Avenue, Altoona.
1905—Taylor, G. P., M. D., Columbia.
1906—Taylor, Howard W., M. D., 316 Collins Ave., Pittsburgh.
1907—Taylor, William S., M. D., Malvern.
1904—Tegtmeier, C. E., M. D., 1237 Shackamaxon Street, Philadelphia.
1905—Tegtmeier, C. F., M. D., 117 Fourth Avenue, Conshohocken.
1906—Terry, Howard, Jr., M. D., 226 Church Street, Phœnixville.
1907—Thacher, George H., M. D., 2008 Chestnut Street, Philadelphia.

1906—Thatcher, J. W., M. D., Thirty-fifth and Hamilton Streets, Philadelphia.
1909—Thomas, A. D., M. D., Forty Fort.
1906—Thomas, C. L., M. D., 2802 Columbia Avenue, Philadelphia.
1877—THOMAS, CHARLES MONROE, M. D., 1825 Chestnut Street, Philadelphia.
1907—Thomas, Delano C., M. D., Forbes and Atwood Streets, Pittsburgh.
1906—Thomas, Edward C., M. D., 711 N. Forty-third Street, Philadelphia.
1906—Thompson, J. G., M. D., 703 Third Avenue, New Brighton.
1886—THOMPSON, J. H., M. D., Fulton Building, Pittsburgh.
1887—THOMPSON, LANDRETH W., M. D., 1701 Green Street, Philadelphia.
1907—Thurston, Leon, M. D., Empire Building, Pittsburgh.
1907—Tindall, Percy A., M. D., 1613 S. Broad Street, Philadelphia.
1891—Tomlin, R. E., M. D., 2057 N. Eighth Street, Philadelphia.
1907—Tomlinson, W. H., M. D., 44 E. Walnut Lane, Philadelphia.
1909—Tomlinson, W. I., M. D., 1415 Shunk Street, Philadelphia.
1905—Tripp, J. C., M. D., Warren Centre.
1908—Truter, C. W., M. D., Homœopathic Hospital, Pittsburgh.
1901—Tuller, John J., M. D., 2102 Chestnut Street, Philadelphia.
1906—Tyrrel, Urania, M. D., 154 N. Twentieth Street, Philadelphia.
1896—Ulrich, Silvester, M. D., Elizabethtown.
1906—Umstead, D. B., M. D., Tacony, Twenty-third Ward, Philadelphia.
1909—Vail, Howard L,, M. D., Scranton.
1883—VAN BAUN, W. W., M. D., 1404 Spruce Street, Philadelphia.
1886—VAN DEUSEN, EDWIN M., M. D., 2101 Tioga Street, Philadelphia.
1907—Van Keuren, J. C., M. D., Chester.
1896—Van Lennep, G. A., M. D., 1833 Chestnut Street, Philadelphia.
1881—VAN LENNEP, W. B., M. D., 1421 Spruce Street, Philadelphia.
1898—Van Tine, J. Lewis, M. D., 1706 Girard Avenue, Philadelphia.

1901—Varner, Anna D., M. D., 616 Wood Street, Wilkinsburg.
1907—Vaughan, E. M., M. D., Royersford.
1905—Waaser, J. F., M. D., E. Mauch Chunk.
1909—Wait, Oliver B., M. D., 5203 Chester Avenue, Philadelphia.
1904—Walker, H. Ellen, M. D., Sharon.
1907—Wallace, H. D., M. D., 412 Sandusky Street, Allegheny.
1907—Walley, L. P., M. D., Mifflintown.
1906—Walter, J. A., M. D., Punxsutawny.
1896—Walter, Robert, M. D., Walters Park.
1894—Ware, H. B., M. D., corner Washington Avenue and Linden Street, Scranton.
1906—Wasserman, Flora E., M. D., 1909 N. Broad Street, Philadelphia.
1904—Watson, Franklin, M. D., Willow Grove.
1894—Waylan, Julia Gould, M. D., 1832 Tioga Street, Philadelphia.
1894—Weaver, H. S., M. D., 1433 Spruce Street, Philadelphia.
1902—Weaver, W. A., M. D., 1331 Girard Avenue, Philadelphia.
1909—Webster, George C., M. D., 311 W. Seventh Street, Chester.
1894—Webster, Samuel C., M. D., Media.
1907—Weil, John H., M. D., 2838 N. Fifth Street, Philadelphia.
1905—Wells, G. Harlan, M. D., 1623 Arch Street, Philadelphia.
1907—Wendt, C. L., M. D., 117 S. Highland Avenue, Pittsburgh.
1909—Wesner, C. J., M. D., Johnstown.
1905—Wesner, M. A., M. D., 407 Franklin Street, Johntown.
1906—White, A. Grace, M. D., Bradford.
1909—White, Robert V., M. D., Scranton.
1889—White, Roland T., M. D., 914 Western Avenue, Allegheny.
1904—Wiest, Harry G., M. D., Schuylkill Haven.
1907—Wilcox, Frederic P., M. D., 2031 Diamond Street, Philadelphia.
1899—Wilford, H. H., M. D., Bangor.
1906—Willard, Lewis D. W., M. D., 955 Western Avenue, Allegheny.
1870—WILLETS, WILLIAM, M. D.
1907—Williams, Clara H., M. D., 822 Wood Street, Wilkinsburg Sta., Pittsburgh.
1907—Williams, C. C., M. D., 24 Washington Avenue, S. S., Pittsburgh.

1903—Williams, Harry E., M. D., Coatesville.
1908—Williams, H. O., M. D., Lansdale.
1905—Williams, Olin A., M. D., Butler.
1908—Williams, William Rendell, M. D., 111 S. Forty-second Street, Philadelphia.
1908—Williams, W. Lear, M. D., Mt. Carmel.
1906—Williamson, M. S., M. D., 500 S. Forty-second Street, Philadelphia.
1905—Wilson, M. A., M. D., 140 E. Eighth Street, Erie.
1908—Winget, S. E., M. D., Waynesburg.
1907—Witmeyer, H. C., M. D., 500 N. Eighth Street, Lebanon.
1907—Wolfe, W. Wesley, M. D., 24 N. Diamond Street, W., Allegheny.
1907—Woodard, F. H., M. D., Sugar Grove.
1904—Wooldridge, F. V., M. D., 408 Second Avenue, Pittsburgh.
1904—Yale, Arthur W., M. D., 1901 Park Avenue, Philadelphia.
1908—Yeager, William H., M. D., 3300 N. Fifteenth Street, Philadelphia.
1905—Yeagley, J. H., M. D., 127 E. Market Street, York.
1905—Yeagley, J. M., M. D., 144 N. Prince Street, Lancaster.
1906—Yocom, C. A., M. D., Carlisle.
1880—YODER, DANIEL, M. D., Catasauqua.
1907—Yost, George G., M. D., 643 N. Sixteenth Street, Philadelphia.
1894—Ziengenfus, A. Frank, M. D., 1124 Wallace Street, Philadelphia.

HONORARY MEMBERS.

1883—Allen, H. C., M. D., 5142 Washington Avenue, Chicago, Ill.
1898—Custis, J. B. Gregg, M. D., 110 E. Capitol Street, Washington, D. C.
1908—Horner, J. Richey, M. D., 655 Rose Building, Cleveland, Ohio.
1908—Jones, Gaius J., M. D., 310 Caxton Building, Cleveland, Ohio.
1876—Jones, S. A., M. D., Ann Arbor, Mich.
1900—Nash, E. B., M. D., Cortlandt, New York.
1883—Phillips, W. A., M. D., Cleveland, Ohio.

1898—Porter, Eugene H., M. D., 181 W. Seventy-third Street, New York.

1892—Williamson, Alonzo, P., M. D., Patton, San Bernardino County, Cal.

CORRESPONDING MEMBERS.

1873—Alvarez, Paz, M. D., Madrid, Spain.

1873—Chauvet, Fernand, M. D., Tours, France.

1873—Eidherr, Francis, M. D., Vienna, Austria.

1893—Pope, Alfred C., M. D., London, England.

NECROLOGICAL LIST.

1902—Adams, W. K., M. D., died July 17th, 1903.
1866—Ashton, A. H., M. D., died February 18th, 1883.
1899—Baker, Daniel J., died July 30, 1902.
1866—Barnaby, John E., M. D., died January 5th, 1869.
1867—Barrett, Charles B., M. D., died June 5th, 1871.
1875—Betts, B. F., M. D., died January 16th, 1909.
1882—Bernard, H., M. D., died ———.
1903—Bigler, Bernard E., M. D., died February 20th, 1905.
1872—Bigler, William H., M. D., died December 10th, 1904.
1866—Blakeley, W. James, M. D., died January 14th, 1877.
1884—Boyd, G. S., M. D., died May 10th, 1901.
1870—Bratt, Benjamin R., M. D., died January 31st, 1872.
1896—Brewer, Mary, M. D., died June 10th, 1907.
1895—Brierly, Frank Walter, M. D., died June 17th, 1899.
1866—Brooks, Silas S., M. D., died July 2d, 1871.
1883—Brown, Samuel, M. D., died March 22d, 1892.
1891—Brown, William K., M. D., died October 3d, 1900.
1885—Buchman, Francis, M. D., died July 14th, 1898.
1891—Burlingame, F. W., M. D., died ———.
1883—Burr, Richard, M. D., died March 30th, 1885.
1873—Caruthers, R. E., M. D., died January 3d, 1885.
1868—Charlton, S. T., M. D., died November 9th, 1886.
1908—Cheney, Howard, M. D., died March 5th, 1909.
1863—Childs, William R., M. D., died November 11th, 1888.
1883—Coe, Sarah J., M. D., died November 4th, 1903.
1866—Cook, William H., M. D., died March 11th, 1879.
1866—Cooper, John F., M. D., died August 19th, 1899.
1866—Cote, M., M. D., died May 29th, 1878.
1866—Cowley, David, M. D., died October 30th, 1886.
1898—Cresson, Charles C., M. D., died ———.
1868—Dake, J. P., M. D. (honorary), died October 28th, 1894.
1891—Davis, B. L., M. D., died ———.
1866—Detweiler, Henry, M. D., died April 21st, 1887.

1886—Dowling, John W., M. D. (honorary), died January 14th, 1892.
1871—Dreibelbis, David L., M. D., died March 24th, 1872.
1867—Dudley, Pemberton, M. D., died March 25th, 1907.
1878—Duff, P. S., M. D., died April 1st, 1904.
1870—Earhart, Jacob R., M. D., died June 23d, 1891.
1891—Ely, J., M. D., died ———.
1870—Farrington, E. A., M. D., died December 17th, 1885.
1904—Felsberg, Paul F., M. D., died October 28th, 1906.
1880—Ferson, John L., M. D., died July 12th, 1896.
1866—Freise, Michael, M. D., died February 4th, 1880.
1866—Frost, J. H. P., M. D., died January 21st, 1875.
1873—Fulton, H. W., died June 23d, 1907.
1889—Gangloff, Charles, M. D., died January 22d, 1898.
1866—Gardiner, Richard, M. D., died March 22d, 1877.
1866—Gause, O. B., M. D., died January 11th, 1895.
1905—Gerberich, M. B., M. D., died November 1st, 1905.
1899—Godshall, Samuel G., M. D., died April 4th, 1903.
1867—Gramm, Gustavus E., M. D., died November 2d, 1901.
1886—Griffith, Jethro J., M. D., died July 5th, 1893.
1881—Griffith, Silas, M. D., died May 21st, 1904.
1877—Griffith, William M., M. D., died April 20th, 1903.
1877—Grumbeid, William, M. D., died ———.
1866—Guernsey, H. N., M. D., died June 27th, 1885.
1870—Guernsey, W. F., M. D., died February 16th, 1877.
1867—Gumpert, B. Barton, M. D., died June 23d, 1904.
1895—Hall, William D., M. D., died August 2d, 1897.
1904—Haller, George C., M. D., died September 7th, 1909.
1883—Hancock, Joseph, M. D., died January 19th, 1906.
1904—Harry, F. M., M. D., died November 20th, 1905.
1888—Hawley, S. B., M. D., died March 6th, 1890.
1868—Helmuth, William Tod, M. D. (honorary), died ———.
1866—Herron, James A., M. D., died November 15th, 1868.
1866—Hofmann, Herman H., M. D., died April 4th, 1891.
1886—Holcombe, John Randolph, M. D., died December 17th, 1896.
1884—Hosfeld, George, M. D., died November 9th, 1884.
1873—Houard, J. G., M. D., died April 24th, 1878.
1885—Houghton, Henry C., M. D. (honorary), died ———.

1889—Hoy, H. K., M. D., died July 5th, 1906.
1882—Ivins, Horace F., M. D., died January 1st, 1899.
1866—James, Bushrod W., died January 6th, 1903.
1866—James, David, M. D., died June 6th, 1873.
1866—Jeanes, Jacob, M. D., died December 18th, 1877.
1905—Klock, H. A., M. D., died February 1st, 1908.
1866—Koch, Augustus W., M. D., died May 4th, 1886.
1889—Lazear, Lyttleton L., M. D., died ———, 1898.
1866—Lee, J. K., M. D., died November 10th, 1887.
1869—Lee, John K., M. D., died May 31st, 1899.
1894—Lentz, Levi R., M. D., died May 27th, 1902.
1870—Lilienthal, S., M. D. (honorary), died October 3d, 1891.
1867—Lippe, Adolph, M. D., died January 23d, 1888.
1871—Lovejoy, E., M. D. (honorary), died August 15th, 1872.
1868—Malin, George W., M. D., died January 18th, 1883.
1886—Malin, John, M. D., died November 29th, 1889.
1866—Marsden, J. H., M. D., died August 27th, 1883.
1865—Martin, Henry Noah, M. D., died September 1st, 1889.
1877—Martin, W. J., M. D., died November 17th, 1908.
1881—May, Newton, M. D., died January 27th, 1889.
1866—McClatchey, R. J., M. D., died January 15th, 1883.
1887—Millen, J. C., M. D., died ———, 1901.
1875—Mohr, Charles, M. D., died October 31st, 1907.
1870—Moore, Thomas, M. D., died March 25th, 1882.
1867—Morgan, John Coleman, M. D., died June 27th, 1899.
1866—Neville, W. H. H., M. D., died January 22d, 1904.
1873—Nichol, Thomas, M. D. (corresponding), died June 14th, 1890.
1907—O'Donnell, H. J., M. D., died September 14, 1908.
1869—Ostrander, W. M., M. D., died August 23d, 1881.
1868—Paine, H. M., M. D. (honorary), died December 5th, 1903.
1868—Payne, William E., M. D. (honorary), died March 9th, 1877.
1878—Pereira, Ignacio, M. D. (corresponding), died April 18th, 1881.
1894—Peters, J. Elwood, M. D., died ———, 1904.
1868—Pfoutz, J. S., M. D., died ———.
1906—Plush, Samuel M., M. D., died May 4th, 1909.
1866—Preston, Coates, M. D., died August 9th, 1881.

1868—Pulte, J. H., M. D. (honorary), died February 24th, 1884.
1882—Pursel, J. E., M. D., died March 15th, 1885.
1872—Rankin, John Stephen, M. D., died April 21st, 1899.
1866—Raue, Charles G., M. D., died August 21st, 1896.
1867—Reading, Edward, M. D., died March 7th, 1889.
1866—Reading, John R., M. D., died February 14th, 1886.
1870—Reinhold, H. E., M. D., died March 6th, 1879.
1871—Rittenhouse, S. R., M. D., died June 26th, 1895.
1895—Roberts, C. W., M. D., died March 20th, 1903.
1866—Roberts, R. Ross, M. D., died April 4th, 1875.
1887—Rodes, Joseph, M. D., died ———, 1898.
1866—Rosseau, L. M., M. D., died September 25th, 1882.
1874—Schmucker, Francis R., M. D., died ———.
1872—Scott, James L., M. D., died August 15th, 1876.
1883—Sharkey, W. P., M. D., died August ———, 1903.
1892—Shoemaker, D. W., M. D., died April 27th, 1904.
1883—Skeels, James S., M. D., died ———, 1891.
1880—Smedley, Isaac G., M. D., died December 1st, 1899.
1887—Snader, E. R., M. D., died January 4th, 1909.
1870—Spencer, J. H., M. D., died ———.
1872—Speth, W. F., M. D., died May 11th, 1881.
1889—Starr, Pearl, M. D., died July ———, 1900.
Stauffer, D. R., M. D., died March 16th, 1874.
1894—Steele, William G., M. D., died April 30th, 1906.
1867—Stevens, C. A., M. D., died January 17th, 1881.
1868—Talbot, I. Tisdale, M. D. (honorary), died July 2d, 1899.
1870—Taudte, F., M. D., died March 27th, 1878.
1902—Taylor, William Gardiner, M. D., died March 4th, 1904.
1871—Thomas, Amos R., M. D., died October 31st, 1895.
1891—Tindall, Harry Brooks, M. D., died January 9th, 1892.
1882—Trites, W. B., M. D., died January 19th, 1890.
1889—Visher, Carl V., M. D., died May 13th, 1906.
1867—Walker, Mahlon M., M. D., died March 31st, 1896.
1870—Waters, George H., M. D., died ———, 1892.
1880—Way, J. H., M. D., died September 3d, 1887.
1881—Weaver, Chandler, M. D., died November 1st, 1906.
1866—Willard, Lewis H., M. D., died July 30th, 1906.
1866—Williams, Thomas C., M. D., died October 1st, 1899.

1866—Williamson, Walter M., M. D., died December 19th, 1870.
1866—Williamson, Walter, M. D., died May 5th, 1874.
1868—Wood, James B., M. D., died April 14th, 1889.
1904—Yerkes, Frank E., M. D., died December 22d, 1904.
1897—Yetter, A. F., M. D., died May 8th, 1898.
1874—Young, J. H., M. D., died June 21st, 1894.
1880—Zerns, William M., M. D., died September 21st, 1887.

PAPERS
AND
DISCUSSIONS

REPORT OF THE SECTION OF HOMŒOPATHIC INSTITUTES AND CLINICAL MEDICINE.

Some Clinical Experience with Sinapis Nigra, by H. M. Bunting, M. D.

Homœopathic Remedies in Neurological Practice, by W. F. Baker, M. D.

The Therapeutic Question; Its Difficulties and Its Solution, by Clarence Bartlett, M. D.

Diagnosis of the Cardio-Vascular Function, by G. M. Golden, M. D.

Clinical Cases, by C. Spencer Kinney, M. D.

Homœopathy; a System of Rational Therapeutics; Its Right to Survive, by J. H. McClelland, M. D.

Blood Pressure—Its Value in Diagnosis, by O. H. Paxson, M. D.

X-Ray Therapy in Diseases of the Skin, by Edward H. Pond, M. D.

The Influence of Heredity in Pulmonary Tuberculosis, by G. Harlan Wells, M. D.

Insomnia, by Arthur W. Yale, M. D.

SOME CLINICAL EXPERIENCE WITH SINAPIS NIGRA.

H. M. BUNTING, M. D., NORRISTOWN.

Given a condition of acute coryza, with sneezing, lachrymation, itching, smarting, soreness and pressure of eyeballs, dryness of nostrils with stoppage, especially of left, and a scanty thin acrid discharge, with hot, dry feeling in the pharynx, hacking cough, and rawness in the throat with desire to clear it, hoarseness, a tired feeling all over, lassitude, and general done up feeling. I know of no more efficient remedy than sinapis nigra.

For two years it has met a condition of beginning cold in cases where Aconite, Capsicum, Cepa, Gelsemium, Nux-vomica and other remedies closely allied in their symptology failed to relieve, and in failing the catarrhal condition would extend to the mucosa of the

larynx and bronchi, with the condition designated by my patients as the "Cold has gone down and settled on my chest."

In the period before mentioned, I have repeatedly checked what would, in my experience, have otherwise resulted in a cold and cough which, in many instances, would have taken many weeks to cure.

I have relieved and cured more cases with this remedy, where the symptoms above indicated were complained of together with heat and fulness of the head, general tired feeling all over, and the complete and very common picture of a beginning coryza, than with any three other remedies.

I believe it to have a sphere of action closely allied to Aconite, Capsicum, Gelsemium and Nux-vomica, but it will be found to benefit cases where we have fallen into the too common habit of administering these or other better known remedies.

The cure of an incipient catarrhal condition of the mucous membranes of the eyes, nose and throat is a most important and praiseworthy object, when we reflect that if such a condition continues, it may affect the bronchi and lungs of an individual.

The sphere of action of sinapis with me has been solely in these incipient and early stages, and when a case presents itself, as many do, with a thickened white or yellow nasal discharge, or when cough and expectoration are the more prominent features, when, in other words, the case is not seen in its beginning with the catarrhal symptoms of the head most prominent, I do not think it has any curative field of action.

In this short sketch I merely wish to call your attention not to a new remedy, but to one that I believe to be far too infrequently used.

HOMŒOPATHIC REMEDIES IN NEUROLOGICAL PRACTICE.

WILLIAM F. BAKER, M. D., PHILADELPHIA.

When those of us who are engaged in this special line of work are asked concerning certain remedies which have a specific action on the nervous system, the answer is usually looked upon with doubt as to the results obtained. While it is true that we are called upon

to treat the most helpless and at times the most hopeless cases, yet alleviation is sought for at times when cure is quite impossible and when a cure should result, of course, we are entitled to the credit of the accuracy of our investigations.

Perhaps in no other class of cases is the practitioner called upon for a finer discrimination in the selection of a remedy than those so-called nervous cases or cases presenting nervous phenomena, especially for two reasons, (1), the variety and the number of symptoms presented, (2), the veracity of the symptoms present; not but that those symptoms are real and honest to the patient, but that they are so apt to be misleading in the selection of the remedy and add to the confusion in which you find yourself after examining a case of this nature. If we are to take into account every mental picture of a patient's symptomatology we will find that not only some of our patients are confused in their ideas, but we will also share that same confusion if we are not in a position to sort out or separate and arrange in logical order the symptoms presented.

The first clinical suggestion then that can be offered is that a careful record should be made of the case and a thorough physical examination be completed before the validity of any symptoms should be questioned. In the consideration of the results to be obtained from remedies in neurology, one must understand the diagnostic and prognostic situation thoroughly. It is taken for granted that when the disease has spread so far as to destroy the neural elements or by reason of inflammatory processes these neural elements representing nutrition to nerve cells have been replaced by connective tissue, scar tissue results as it does in other tissues. Sometimes we lose sight of the fact that the physiological law of the loss of function in highly organized tissues comes into play, i. e. the finer the construction the more delicate the part, the quicker it is subjected to disintegration and correspondingly a slower return to normal when the operating cause has been removed.

The consideration of these details should not confuse us, but it will enable us to take a more charitable view of the therapeutics of neurological cases. I take a very interesting clipping from an old edition of Laurie regarding the action of remedies.

He divides into four classes as to susceptibility of drugs and says of the

FIRST CLASS.

Those who are comparatively insensible to medical influence, particularly high potencies, those upon whom the medicines show neither marked action or reaction. Such individuals are generally of what is denominated the leucophlegmatic temperament. They require generally low potencies and frequent repetition. Also in disease we find some persons who appear to enjoy a peculiar exemption from infections and contagious influences. To this rule, however, of giving low potencies in such cases, there are exceptions. I have found in practice, after a careful study of the individual and selection of the remedy suitable to the temperament, a marked action or reaction produced by a very high potency where a low potency of the same remedy failed to elicit any appearance of effect and vice versa.

SECOND CLASS.

Those who show a marked susceptibility to medical action without a corresponding reaction. Such patients are generally of a highly nervous temperament, exceedingly difficult to treat and require particular study. Here the higher potencies are generally called for.

THIRD CLASS.

Those in whom no marked or scarcely perceptible medicinal action declares itself, but a well marked reaction. In such cases we must be guided by other indications in the selection of the potency, watch the effect carefully and avoid a too frequent repetition.

FOURTH CLASS.

Those in whom medicines show a well marked action and reaction. Here also we must be guided by other circumstances in the selection of the remedy so as to obtain the greatest possible benefit without materially increasing the sufferings of the patient. We generally find a particular susceptibility to medicinal influence at any potency in patients dwelling in the country, of robust frame, simple habits and regular lives, who are not subject to any

dyscrasia. In towns, particularly in large, densely populated cities, this susceptibility is greatly developed, but the reaction is less evident. However, as much depends upon the individual, employment, habits and pursuits, it is difficult to give any fixed rule.

The few clinical remedies claiming our attention at this time are:

(1) Arsenicum iodatum.
(2) Cuprum arsenicosum.
(3) Strychnia phosphorica.
(4) Zincum phosphoricum.

These remedies viewed in the light of the present day therapeutics are recognized as deep acting ones and consequently tissue-changing ones; in other words, tonics, alteratives and eliminators. And, after all, the principal actions in neurological therapeutics are to be worked on these lines and they are distinctly homœopathic in the clinical observations from which this paper is written.

The first and perhaps the most important clinical observation is concerning the medicine to be used. By that it is understood that a fresh preparation of any medicine must always be used. A fresh trituration answers this purpose, but when we say fresh, we would have you to understand that the remedy should be freshly triturated from the fresh crude material and dispensed fresh. Tablets in the course of preparation are moistened with a low percentage of alcohol and this is allowed to evaporate before the tablet can be put under seal. In this way we believe that disintegration of the tablet can and does take place.

We offer then as the best method of administration the fresh trituration in powder form or in sealed capsules.

I offer you as an exhibit my own preparations of these drugs.

Copper arsenite being the only one I use in the tablet form.

It must be remembered that these remedies are what are known as compound remedies and deterioration takes place quickly, especially in the compounds containing iodine.

The problem of dispensing these medicines is best met by putting them in gelatine capsule administration or in soft capsules. The dose is accurate and the preparation keeps well, yet you will see that there is some deterioration in the capsules that I filled two weeks ago.

There are some people that cannot take capsules and for these the medicines are arranged in powder form.

Now this may seem like adding to the detail of the office, but from the clinical observations the additional amount of work is rewarded by better results.

As to the dosage here also our clinical observations leads us to prescribe the medicines in doses of from 2 to 5 grains of the second decimal trituration. In the case of the copper arsenite, usually one grain doses suffice.

The dose is usually repeated every three hours, that, of course, depending on the severity of the case and other allied conditions. This is purely clinical and must be determined by the conditions and the circumstances surrounding the individual case.

As to results obtained they are invariably good and this statement is backed up by observations in the Hospital of the Hahnemann Medical College of Philadelphia. Here, not a few, but numerous illustrations of the action of the remedies are under the observation of the several men of the department and I am quite sure that their experience will bear me out in the facts offered to you. However, the field is large and the workers many, and we will look forward to some other opinions, which I hope will be expressed at this meeting.

As general indications for the use of Arsenic preparations, I offer you the following description of Arsenic patients: "He is the most miserly man in the materia medica. In a state of health he is tall, spare and austere. His features are wrinkled, dried and leathery, while his hair and eyes are dark, and his hair is straight and harsh, everything about him is harsh, when he walks by you in the street, he walks fast, runs against you and wants a great deal of elbow room, he is impolite and money-making, covetous and malicious, he would rob his own brother for the sake of gain, he has no affection for the opposite sex, and if he marries he does so to obtain wealth; he is more attentive to his ledger than his wife. He is a very anxious man—he is so anxious to make money that he has no time to be a fashionable man, but studies his ledger instead of attending parties, balls, theatres or the billiard room. He is not a daring man, and therefore does not take great risks in his business operations, but rather seeks wealth through miserly

habits, and low underhanded cunning and meanness. He is totally wanting in moral courage and constantly fears death, he cherishes none of the finer feelings of human nature. Unlike the aconite and phosphorus patients, he never thinks of fine clothes, and never goes into ecstasies over a new hat or a new acquaintance, he has no love for anything except himself. He is himself repulsive and his diseases are of the repulsive kind, such as ulcers, cancers, etc. He loves a hot stove and warmth generally, and his diseases are of a burning and acrid character."

Dr. Henry N. Martin

The actions of the two phosphorus combinations must be considered somewhat together.

Clinically we look upon phosphorus as being in itself a strong nerve remedy, but we do not begin to know its possibilities until we look at the possibilities when combined with metals, such as zinc and the alkaloidal principle strychnia. In Zincum phos we have a peculiar remedy, for there is an exaggeration of the phosphorus condition and so closely has this been noticed, that Farrington long ago studied this remedy in connection with phosphorus, and if in the light of the present day advancement in medicine we could study the older masters, how much better would we appreciate them, and while they may not have expressed the current thought in their writing, yet we cannot but conclude that their observations will court investigation along modern lines of medical thought.

Phosphorus women are to be described as peculiar. Sometimes these peculiarities are only manifestations of uneasiness or timidity, it may be the gesture of a young man who is being talked to and who turns his hat between his hands, who scratches his ear or his head, or pulls convulsively at his mustache. We all have these habits when we are with other people, even though we could not distinctly point out the psychic emotion of the uneasiness.

The idea of occasionally making use of the teeth to bite a nail is natural, we also try to tear off a bit of skin which is hanging from our lips. In the mentally weak who cannot resist their impulses all the movements become automatic. This becomes a

mania. These habits are designated by the names onychophagia and cheilophagia; and these bad habits are often incurable ones. In sick people these disorders of motility are much more marked, they denote phobias and strange convictions of helplessness.

Mme. X. is a Jewess twenty-eight years of age, somewhat degenerate and badly proportioned. Her head is large, her limbs short and her walk waddling, like that of a duck. Impressionable and emotionable to excess, she has agoraphobia in the highest degree. Sometimes finding respiratory anguish, she gets the fixed idea that she must draw her breath voluntarily in order not to suffocate. Thus she takes much trouble to open her mouth in a suitable way and tries to raise the thorax at regular intervals. All these movements, which are ordinarily automatic, are voluntary with her and are clumsily performed.

In conversation she listens distractedly; one finds her continually preoccupied with herself. Her anxiety is shown by a number of unconscious movements. Sometimes she continually thrusts her first finger between the leaves of a pocket-book which she carries in her hand, all the while knotting her handkerchief around the latter. She puts one of her feet in a peculiar attitude, forcing it around backward so as almost to bring the heel forward. She throws her head back with a jerking movement as if to put her hat in place, and all the time she never forgets her respiration and forces herself to draw her breath.

A remedy which has proved very successful in the hands of many of the best nervous specialists is Zinc. A new feature of this remedy in our experience has been the powerful effect it has in inducing sleep. When combined with phosphorus it forms a very good medicine in the treatment of insomnia and chronic alcoholism, especially is this remedy of service in the anemic.

Zinc offers us many valuable suggestions in the treatment of chorea. The general experience with Zinc, even in the practice of the regular school, has been uniformly good. The late Dr. Hughes says that in chorea it has been most frequently employed as a remedy and has generally been successful. He reports forty-seven (47) cures out of sixty-three (63) cases.

In epilepsy the phosphate of zinc has been of great service. Un-

doubtedly it is sedative in its action. It lessens spasmodic movements, especially those of a paroxysmal character, and our experience has been that at times it induces sleep where vegetable sedatives have failed.

In neuralgias dependent upon exhausting conditions of the nervous system, in our experience, zinc offers a most suitable remedy. The relief is prompt and long lasting, especially if the neuralgia or nervous pain has a morning aggravation and is dependent upon some exhausting condition of the nervous system generally.

Zinc, then, is to be looked upon as the remedy where anemia is a causative factor and where brain exhaustion is the leading symptom. Among these we may mention paralysis, convulsions, chorea and spinal irritation.

Bartlett says of zincum in Goodno's Practice: "Zincum is employed by both schools of medicine. Its homoeopathicity is unquestionable. A few years ago a series of cases of nervous diseases attacking the workmen in the mines of Upper Silesia was reported by Schlochow. The disease only attacked those who worked in the mines for a number of years. They were marked by incoordination of gait and anaesthesia of the lower extremities. Zincum is especially indicated when numbness and formication of the lower extremities are pronounced, also when there are burning pains along the spine, pain at the last dorsal vertebra and other symptoms of spinal irritation. Sexual power is generally lost." He says further of a combination of phosphorous with zinc ought to make a valuable spinal remedy.

Phosphorus is still another remedy used by both schools. He says of it: "It is especially indicated in erethistic cases. Burning along the spine and in the affected extremities is a prominent symptom. Extreme sexual excitement is present."

When atrophy of the optic nerve is present, it is associated with flashes of light. This clincal suggestion has been verified repeatedly in our work in cases of interstitial atrophy of the optic nerve.

A clinical observation which has been verified repeatedly is the one that in cases of chorea affecting the feet, especially that which is brought on by fright, yield readily to the use of zincum.

In cases of nervous prostration Bartlett recommends zincum phosphoricum, in the first potency four times daily, but our clinical

experience has been confined to the remedy in the second potency and repeated every three hours.

Generally classifying its action it may be said to act profoundly upon the cerebro spinal nervous system, producing a condition of excitement in the brain and spinal cord followed by an exhaustion of the nervous centers. Another marked characteristic of the medicine is its peculiar effect upon the blood, in which it produces changes similar to those present in chlorosis. This general summary of its action will lead one to varied ideas concerning its use. By outlining, in this way, the general functions of the remedy, one can readily suggest numerous uses for it, and if the keynote of its action is kept constantly in mind, one must expect uniformly good results; or, at least, this has been our experience with this drug. Such a powerful nervous stimulant, when combined with phosphorus, has its action increased, and as a nerve tonic it is ideal, because its already powerful action is added to by the presence of the phosphorus. Being such a powerful remedy, it is absolutely necessary that the preparation from which the trituration is made should be fresh and of the highest grade, the dose accurately and carefully measured, and the remedy carefully watched. Because of the after depressing effect of this remedy its use cannot be indiscriminately carried on. The best results in the use of this drug are obtained by giving it until its maximum effects have been produced. It then becomes necessary to reduce the dose of the remedy, or to substitute its complement, phosphorus, in a high dilution. This last suggestion is one that has occurred to us in treating many cases of the conditions above named; yet, at times, the action of the drug seemed to be limited, or its climax reached. We were at a loss first to know what to use after this climax, and phosphorus in a high dilution has seemed to answer the requirements.

As another complementary remedy, the strychnia salts must be taken into consideration. The after depressing effect of these salts is not as pronounced as that of zinc, and consequently in the administration of them, we must not expect so deep an action and reaction.

Strychnia phosphate; melancholia; vertigo, dizziness, visual disturbances especially incident to excesses in tobacco, whiskey or the loss of vital fluids; paralysis, postdiphtheritic; masturbation; multiple neuritis of diabetic origin; spinal neuroses; hysterical spine.

Copper Arsenite—This remedy must be considered first and foremost where one is dealing with symptoms dependant upon deficient kidney action. This one fact leads to an immense possibility for the drug and gives its symptomatology a broad field. Then, too, its action and result clinically are invariably good. Chief among these symtoms are those classed as uremic; among which are headache, vertigo, and unconscious conditions resulting from brain oedema, paralysis of cranial nerves, toxic spasms, either local or general, and hemiplegias,

As illustrative of a case of advanced myelitis, I quote the following from the records of Hahnemann Hospital.

Thomas W. No history of nervous symptoms in the family. When eighteen years of age had his first attack of gonorrhoea and has had four attacks since. About one year ago had a chancre, sore throat, mucuous patches, no falling out of the hair. Severe bone pains. Rash all over the body. About a year after began with severe pain in the chest, sharp, shooting in character. Then the pains began to be severe in all parts of the body and especially in the limbs. At this time he was forced to give up walking and attacks of incontinence of urine began and he was forced to go to bed from his inability to walk. Severe pains in the chest, worse at night.

Physical Examination: Inspection, Legs well developed and signs of atrophy. Reflexes absent on both sides. No clonus, absent babinski, absent cremaster. Fine tremor of the hands. Reaction of degeneration positive.

This patient was greatly relived by phosphate zinc, 2x given every three hours.

THE THERAPEUTIC QUESTION; ITS DIFFICULTIES AND ITS SOLUTION.

CLARENCE BARTLETT, M. D., PHILADELPHIA.

Prophylaxis of disease and the treatment of the sick are the ultimate aims of medical science. While vast improvements have been made in both branches, our knowledge and practice of them are still far from ideal. Were it otherwise, illness would be rare, the sick would invariably recover, and but two causes of death would be

recognized, namely, violence and old age. Unfortunately the possible and the ideal are still wide apart, and it is this vast distance between the attainable and the desired end that is disappointing and has led to much of the pessimism that is rampant throughout the land. Physicians in the kindness of their hearts long for a medical Utopia. Humanity is sick, humanity must be cured; presto with the magic wand, and humanity is well! However laudable may be our Utopian ambitions, we must admit that they are unreasonable. It takes time to cure the sick. Careful studies must be made of patients even more perhaps than of their illnesses. In the majority of instances, a cure is obtainable only when patient, family and friends co-operate. Because the ideal is not always possible in the present state of medical science, we are only too apt to become pessimistic and deny the efficiency of treatment, especially that bearing upon the application or administration of medicines. As evidence of this pessimism, witness such sayings as the following: "He is the best physician who knows the worthlessness of most drugs;" "If all the drugs were cast into the sea better would it be for humanity and the worse for the fishes;" "Treatment consists mainly of nursing and nux vomica;" "He who purges cures." Really, it is possible for me to quote a remarkably large number of such cynical sayings Personally, I have serious doubts if their originators ever took themselves seriously. It is very pleasant to invent phrases which jingle to the ears and which give the impression of wit. When these pessimists are sick, I have noticed that they are very much like the dying atheist who turns to his Almighty, and are ready to seek help with the avidity of the therapeutic optimist.

Certain factors are necessary to the advancement of a therapeutic science. The first is a correct understanding of the action of medicines. This cannot be attained without an amount of work that is almost beyond the conception of the human mind. So great indeed is it, that the few who have undertaken the task seem to have been overwhelmed by it, and have thus far accomplished but little of practical value. We have provings, it is true, but these were made many years ago, and their value is invalidated in some directions by their evident inconsistency with the modern discoveries in the medical sciences. On the other hand we find that in other directions, modern medical science has strengthened some of these older obser

vations. Unfortunately, the evident falsities are permitted to stand in literature and thus serve to cast a doubt upon the value of the "known to be good."

A materia medica must be consistent with the *positive* facts of pathology. This statement in the abstract cannot be denied by any one. But we are here up against the statement that what we accept as orthodox in pathology today may be heterodox tomorrow. When pathology is perfect, then that science must be a necessary prerequisite to the proper understanding of drug action. This leads me to remarks concerning the objective symptoms in drug provings. The modern surgeon is laying great stress on "dead house" versus "living pathology." He is striving to enforce the idea that there are stages in the course of "lesions" in which they present very different features from those observed on the autopsy table. Treated in their early stages, they are absolutely curable; treated in their terminal stages with their many sequelæ and complications, they are doomed to inevitable failure. In drug provings, it cannot be gainsaid that the study of drug action which takes cognizance only of a terminal result, as carcinoma, ulceration, neuritis, etc., is inefficient for practical use. We must have knowledge of the intervening stages intervening between the time of health and the terminal lesion or lesions. The terminal results are possible only in experiments on the lower animals, for they are so serious in their nature that their production in human beings amounts to suicide or murder. Experimental work of this kind in the laboratory must be very uncertain in its results, because in our haste to make observations or to produce lesions or symptoms, we are too apt to confuse the dynamic or essential, the mechanical and the chemical effect of drugs. The latter two are comparatively useless, as we all know, not that they are to be ignored, but they must be accorded their proper place in drug pathogenesis. A terminal pathology is moreover useless because it is practically never the result of a single or primary cause. Outside factors are always interjected. This remark applies to the effect of medicines as it does to morbid conditions.

Experiments with medicines must be performed repeatedly in order to secure accuracy of result. It will never do to be satisfied with observations that have not been confirmed repeatedly either in provings or in the clinic room. As the number of medicines is

legion, the endless character of our task is appreciated readily. Such work requires men, brains, time and money. The men best qualified for the task are those who prescribe the medicines in the sick room. Unfortunately, they are also the men who can the least of all give the time up to the work. Still they are the ones to do it. Its monumental character should not be a deterring factor. To admit otherwise must premise that the work can never be done. Given the best of brains and abundance of time and money, no one can do more than a fragment; I would go so far as to say that he can contribute only fragmentary knowledge concerning even one medicine. When, however, it is recalled that there are over 125,000 physicians in the United States, and all of them interested in the subject, the value of fragments from each must result in something of great value within a short time providing they will work. The work continued over years must bring even better results.

The contention that all physicians will be neither able or willing to engage in such work is strictly true; but that a sufficient number will do so to make the effort of practical value, goes without saying. Heretofore, our studies of drug pathogensis have failed because too much has been expected of individual men, just as in the past, that which we have is the product of too small a number of minds, and hence is open to the objections incidental to personal equations on the part of observers.

While my remarks are based upon the standpoint of the homœopaths they apply with equal force to physicians of the dominant school. The regular reader of the journal of their Association cannot fail to have been impressed with the longings of the rank and file for simplified prescribing (the single remedy), the smallest or most efficient dose, the growing unpopularity of empiricism and the pocket formulary, and a thorough understanding of drug action. With their great numbers, their many colleges and laboratories, their large endowments, their profession as such has done and is doing little to advance our knowledge of materia medica. The bulk of the work is done in the laboratories of great pharmaceutical houses having large commercial interests. While most of this work is done well as far as it goes, it is by no means efficient. Some few private or college pharmacologic laboratories are working hard, but they undertake too many drugs, their observations thus far are super-

ficial, and their findings are remarkable for their iconoclastic nature.

But comparatively few physicians will be able to secure subjects upon which to make their observations. Nevertheless, the truly enthusiastic will find occasional opportunities. Medical students and laymen and other physicians who are willing to offer themselves for reasonable experimentation exist. Greater opportunities will be found for accidental provings. Under this heading, I would include that not very small class of persons who present idiosyncrasies to this or that medicine. In my own practice, I have found patients exhibiting the following idiosyncrasies: A young woman who despite the beneficial action of bismuth on her stomach, invariably after a few days suffers from small superficial ulcers of the buccal mucous membrane; three patients who are made delirious by digitalis; a large number who get the physiological action of atropia from very small doses, one from a single dose of but 1-1200 of a grain; another whose albuminuria is invariably aggravated by digitalis; a number who became intensely nauseated from small doses of morphia; occasional ones who have general pruritus after morphia; oedema of eyelids and gastric irritation from almost infinitesimal does of arsenic; scarlatiniform eruption and serious cerebro-spinal disturbances from quinine; typhoid delirium from belladonna; coryza and acne from potassum iodide; acne from various bromides; arrhythmia from digitalis; general nervous irritability from strychnia; etc., etc. Physicians whom I have met in consultation have referred to patients among their clientele who exhibit no less marked idiosyncracies. These patients offer us unusual opportunities for drug study, as their symptoms are almost invariably freed from the psychological factor, that of looking for symptoms, either on the part of the subject or his physician.

Lastly, all physicians have the opportunity of adding to our knowledge of the materia medica by the supreme test, clinical experience. Observations from this source, however, too often savor of gross empiricism, which though valuable in its way, is always open to serious objections by reason of the liability to incidental errors and multiple factors. Pharmacy men who call on me to make sales tell me of physicians who purchase certain remedies in lots of five to ten thousand tablets or pints of tincture or potencies at one time.

Is it possible that such large lots of medicines can be used without some knowledge having been gained thereby. For example, here is a physician who purchases 5,000 tablets of ferrum phos. Does that man know nothing about the action of the medicine he buys and dispenses so freely? If the sales books of our pharmacies were opened to our inspection, we would find that the majority of men have their favorite drugs which they must use intelligently or otherwise. If we could but know their experience, would we not be wiser? It matters not whether the results be positive or negative, we can always learn by the perusal of their observations, providing, of course, they make careful records of their cases.

The careful recording of cases is after all the essential feature of the whole matter. Without records systematically kept, a physician is absolutely valueless to his profession. He is like a sponge, which absorbs but gives up nothing without being squeezed. Without records he is too dependent upon impressions and not upon facts. Without records he is deprived of the opportunity of analysis of cases.

The practice of reporting single or selected cases is to be deplored. Single cases, if they prove anything, prove the exception. The rule can only be proven by analysis of a large series. The same objection applies with greater force to selected cases. The latter furthermore exhibit the personal bias of their reporter.

In closing, let me say that I have touched upon many subjects, none of them completely. Indeed, I believe that they are all so great that no one man can speak authoritatively. Each physician can give his own opinions; it is the mass of the profession that must decide after hearing all the evidence. The verdict must be rendered without feeling, prejudice or animosity. We must free ourselves from the domination of those who may be called library doctors, *i. e.*, those whose whole knowledge of the practice of medicine is gained in the library and not by the bedside and in the consulting room. I believe that altogether too much is made of various agencies which act in large manner psychologically; while the various medicines, call them poisons if you will, which have such wonderful and varied actions that they must if intelligently used be of great value in the treatment of the sick. The essential point is that

we know them thoroughly. I believe that we should not be frightened by the criticism of those who talk much and do nothing. It is not oratory and rhetoric, but work and action which count.

DISCUSSION.

DR. T. H. CARMICHAEL: I want to express my appreciation of Dr. Bartlett's interesting paper. The thought occurred to me that in a way it showed indirectly a great tribute to homœopathic practice, in the remarks in reference to pathology; and it occurred to me whether we always think of one of the reasons why homœopathic physicians still have faith in drugs—why homœopathy flourishes at the present time, in spite of the fact that the work upon which it flourishes was all done in the past—is, that these provings which we can use so successfully in the present time are not founded so much upon the changeful science known as pathology as upon the fact that they represent the living patient, the living, sick patient and the drug disease produced upon a living patient. It seems to me it should always be our thought to study the patient in prescribing, and to hold in reserve the various pathological notions which change from day to day. I do not want to undermine the science of pathology, or the part that our provings represent in that science. I think that we should always keep before us the fact we prescribe for the living patient.

I would like to express another appreciation of the thought brought out in the paper; that is, we should in this State Society have a society of provers; and we ought to have a standing committee that would undertake to do work in that line every year.

DR. EDWARD CRANCH: I would like briefly to express my appreciation of Dr. Bartlett's special advice to keep a record of things and give an analysis of a series of cases, rather than selected or exceptional cases. I think that is the most valuable advice we have heard for some time.

DR. J. H. McCLELLAND: There is no question about it in my mind, that the position taken by Dr. Bartlett in his paper is practically the right position for us as a school to take. We ought most certainly to pursue the proving and reproving of drugs according to to modern methods, or not so much modern methods,

because Hahnemann himself worked that problem out, I think, just about as well as it can be done today, except that they may be supplemented with the means that modern science has placed in our hands.

The more we see of Hahnemann's work in working out the various problems incident to medicine, the more remarkable we find it to be. If we were to just turn back to the "Organon" occasionally and look it over, we would find that he was not so much behind the times even in these times. I am very glad to have heard Dr. Bartlett's paper, and to endorse it.

DR. AUGUSTUS KORNDOERFER, SR.: I have expressed my views on this subject so frequently before the State Society that I scarcely feel it necessary to reiterate that which they all have heard me say. So far as concerns Dr. McClelland's remark, that we have much in Hahnemann that is on a par with our new ideas of today, and those who read the "Organon" (that ancient book) today, will find that it might have been written—a large part of it—but yesterday, and by the scientists of today; on referring to this matter in private conversation since I have been in Scranton, the matter was broached in reference to the teachings of Hahnemann in regard to some of our modern ideas. Only this morning one of our doctors turned to me and said: "In the use of medicines where operations ought to be employed, the homœopathic profession is all wrong." "Well," I said, "yes, the profession—a great many of the profession—does not know enough about surgery or surgical diagnosis to know when to operate and when not; but if they had studied the 'Organon,' they would have known." He wanted to know why, how—what the "Organon" had in it about surgical diagnosis. "Why," I said, "the simplest rule in the world, and it is not recorded in the most modern works; and that is, whenever a morbid growth, as Hahnemann puts it—an interfering growth, morbid growth, be it of cystic or solid form, whatever it may be—or even the deposit of a fluid in a cavity, he says that whenever the physiological functionation of the parts is being seriously impeded by such a morbid condition, then an operation is necessary.

Now, that was Hahnemann's advice a hundred years ago. I do not know of any better advice that our surgeons today can give

us; that whenever the physiological functionation of the part is interfered with by a morbid growth, then is the time for operation.

So that—while I fully appreciate all that Dr. Bartlett has said and coincide with all he said in reference to the importance of right methods and to the importance of taking the aggregate of results instead of the isolated cases and in nailing our knowledge of pathology and diagnosis so that we may understand that which we are doing in medicine—at the same time I always like to accentuate the fact that the "Organon" would give some better advice than some of our modern authorities.

DR. CLARENCE BARTLETT: There is no question that many of our principles are being slowly appropriated by the best thinkers of the dominant school of medicine. Only recently, an assistant professor in one of the largest colleges of the country published an article in favor of the single remedy, the minimum dose, individualization of cases, and the treatment of the patient instead of his disease. This paper was used as a text for editorial comment in the *Hahnemannian Monthly*. The writer of the paper felt that he had been unjustly treated in charging him with plagiarism, and so expressed himself in a private letter to the editors. In reply he was given the deadly parallel with quotations from Hahnemann's Organon and his paper. After reading this, he made the very significant remark to a personal friend that Hahnemann was not so much of a fool after all. A reference to literature showed that Hahnemann referred in contemptuous terms to the Pocket Formulary as a foe to good prescribing just as do the eminent old school materia medicists of today.

DIAGNOSIS OF THE CARDIO VASCULAR FUNCTION.

G. MORRIS GOLDEN, M. D., PHILADELPHIA.

A most important factor in connection with cardiac diagnosis may be said to be, to what extent is a heart capable of performing its duty?

This is a question which frequently confronts us; also one demanding considerable thought and attention before arriving at a

definite answer. Such conclusion cannot be obtained in an off-hand manner, or by the usual superficial examination, as practiced.

It is indeed surprising to note, as regards this important subject, that the various text books, enclycopedias, and systems of medicine, give little or no attention whatever to this phase of cardiac diagnosis, in fact many of them have no reference whatever to the subject, either in a practical or theoretical way.

It is an easy matter to ascertain that a heart is not functionating properly, when such evidence as dyspepsia, oedema, vertigo, cyanosis, present themselves. But to dtermine the functional power of a heart, when the signs of anscultation and percussion appear negative, the palpitation of vessels, and examination of internal organs evidence no abnormal changes, it is then a difficult problem. Perchance one may wish to determine how far a convalescence has been established, in regards to the cardiac function in the various acute conditions, or in a cardiac condition; or in such chronic diseases associated with cardiac changes, to what extent the known lesion has weakened the cardio vascular apparatus.

In the differential diagnosis of the various neuroses, and organic disease, we are often in a quandary as to the functional power of the organ, and one must decide whether such symptoms are the expressions of a functional inefficiency, due to organic disease, or the disturbed functions of a nurosis.

Hence the ordinary methods of examination, such as, "Do you get out of breath on going up stairs?" "Can you lie down without oppression of breathing?" are not sufficient upon which to base a judgment. Therefore, we must use other means to elicit the functional power of the heart.

There are numerous observers, who have studied and devised various methods to obtain this data, in fact Ambeard has expressed it in the terms of a mathematical equation.

Although discrepancies may be found in the various methods employed, still the consensus of opinion by those who have investigated this subject, resolves itself into the fact, that while no one method is perfect, yet the application of several of these methods, is of diagnostic importance, and should not be neglected in the routine examination of the heart.

It is the object of this paper to present to you some simple meth-

ods, which may be carried out in any office, with the expenditure of little time, and which the writer has found to be helpful in arriving at a conclusion, as to the heart's funtional capacity.

1.—The simple test of change of position. This is carried out as follows: Counting the pulse while standing, and then while lying; normally there should be a slowing of from five to fifteen beats, when in the lying posture. Competent observers have noticed that this slowing of the pulse rate is either diminished, will disappear, or may be converted into the opposite in a damaged organ. This procedure has been carried out in a number of cases by the writer, of various type, including any condition where there was evidence of cardiac weakness, especially those with dilated heart and myocardiac degeneration, and found the test a most satisfactory one.

2.—The Herz test. This method was suggested by Herz, a German clinician, and termed by him the "Self-Checking Test." It consists of a slow flexion and extension of the right forearm, the elbow and wrist being lightly supported by the physician. The pulse is counted before and during the procedure. During the movements, which must be carried out very slowly, and consume at least a minute, the patient's attention must be concentrated upon this slow movement of the arm, which should require practically no muscular exertion.

Normally there will be no change of pulse rate; in a neuroses an increased pulse rate will be noted, while in a heart that is functionally inefficient, a slowing of the pulse rate will take place as much as twenty beats. The effect of this procedure is in all probability brought about through the central nervous system and partakes of the form of a self-inhibition.

Although this test has been highly lauded by competent observers, I have not attained the general results acclaimed by others. This may have been due to faulty technique, while in such a procedure there is a mental or psychological element to be considered which may enhance the value of the test. In the cases which the writer applied said method, the results were most marked in those cases of cardiac disease attended with general sclerotic changes. In the neuroses an increased pulse rate was obtained as above stated in the reaction to the test.

3.—A test was brought to my attention by observing the fact stated, that if the breath could not be held for fifteen seconds, it was an evidence of an inefficiency. This led me to investigate the following method, which for want of a better term has been called the "Breath Holding Test." It is carried out as follows: The pulse is counted for three or four quarter minutes, so that an average pulse may be computed, and any variations noted for fifteen seconds. The patient is then instructed to take a deep inspiration, holding it for fifteen seconds, during which time the pulse is counted and attention directed to the rhythm. This test I have carried out in some twenty-five to thirty cases, including normal cases, cardiac disease, sclerotic changes, malignant diseases, Bright's disease, in fact types of cases in which in all probability some myocardial weakness existed. The following results were noted: In normal hearts, there was an increase in rapidity of the pulse for the first two or three seconds, followed by a slowing, which became more marked during the breath-holding period, while at the duration of the fifteen seconds the pulse count was either normal or had decreased two to three beats. In abnormal hearts or the diseased conditions mentioned above in which this test was used, the following was noticed. Upon holding the breath there was an increase in the rapidity of the pulse rate for the first five to eight seconds, followed by a slowing, but not to the extent as in the normal cases; at the expiration of fifteen seconds, the pulse count was accelerated from two to five beats. In one case, that of a ruptured compensation, the patient was only able to hold the breath eight seconds, with a marked increase in the rapidity of the pulse during that period. The results of this test were most marked in those cases of cardiac disease where the right side of the heart and lesser circulation were involved. In the remainder of cases where myocardial weakness was probable the test was positive. This method appears to be worthy of a trial, it is mentioned for what it may be worth, that you may use this simple method, and draw your logical conclusions.

These foregoing tests, which have been mentioned, are carried out with the expense of little time, and without the use of instruments.

4.—Graupner's Test. To perform this test a blood pressure in-

strument is necessary. Graupner in his research upon this section of cardiac diagnosis, observed that the reaction of weakened hearts, to a certain amount of measured exercise, differed considerably from the reaction in normal hearts.

It is generally accepted that the systolic blood pressure and pulse rate rise after exertion, and if this exertion be prolonged, the blood pressure and pulse rate will diminish to or below the normal for that subject.

To sum up Graupner's results, he observed the following phenomena: After the pulse rate has risen and again fallen to the normal, as the result of a measured amount of exercise, the systolic blood pressure continues to rise, reaching its maximum some minutes later after the pulse rate has returned to normal, and followed by a gradual decline in the blood pressure to or below the normal. This cycle he termed the "normal erholung." In weakened hearts if damage not too great, this "erholung" takes place, but is delayed and diminished in degree. In serious weakened hearts, the "erholung" may be absent, or the blood pressure descends from the start, and gradually returns to the normal.

In performing this test Graupner used a specially devised machine, by which the amount of work done could be measured. For all practical purposes it may be computed in foot-pounds, as suggested by Cabot. By multiplying the height ascended, by the weight of the individual, the height ascended being obtained by having the patient climb a known height of steps. After this procedure, the pulse rate and blood pressure are observed every two minutes until the normal point is reached. The normal pulse and blood pressure being observed before the exercise. Chart I shows the normal reaction, and the "normal erholung" may be observed.

Although this procedure may require from twenty to thirty minutes to perform, yet such a method and an expense of time are warranted by the fact that from observations made by the writer by this method he is convinced that it is at present the most reliable and efficient method and affords the best evidence as to the functional power of the heart, than any other test at our command at the present day.

To show the efficiency of such a test, Charts II and III illustrate

cases in which the physical signs gave little or no information, with the exception of a decreased muscular tone of the heart, as heard over the various areas. In both of these cases while the physical signs and the clinical signs were not sufficient to state that the heart was exactly faulty, yet one felt reasonably sure that the functional power of the heart was not up to par. The test in both cases revealing practically the total absence of the "erholung," and at the expiration of twenty-four minutes, the pulse and blood pressure had about reached the normal point, as can be seen in Charts II and IIII. From the observation on such hearts, although the clinical and physical data are insufficient upon which to base an opinion yet by the use of this test is revealed the fact that such hearts have a low functional power, and little or no reserve power.

The question arises, do such tests enable us to detect cardiac weakness? This cannot probably be answered at the present time. Although there is probably no one accurate test, still it opens a field of research in such methods, and it is the duty of the physician in his routine examination of the heart to employ some such methods to determine what the functional power of the heart may be, such knowledge affording a great help as to therapy and prognosis.

In closing I feel justified in recommending to the practitioner these few simple methods for the determination of the functional power of the heart, when considered in conjunction with other evidences of cardiac inefficiency, as the respiratory symptoms, the pulse, cyanosis, a most valuable evidence of cardiac inefficiency when associated with sound lungs, renal inadequacy, and other evidences of venous stasis.

CLINICAL CASES.

C. SPENCER KINNEY, M. D., EASTON.

An invitation to lunch at the home of an old friend of mine, who made a special study of mental diseases, was the cause of placing me in rather an annoying position. During lunch hour, I was told by my friend and his wife of the wonderful progress that was being made by their son in his studies at High School, where the competition was very great, owing to there being a larger number

of ambitious students than usual. What made the conversation peculiarly trying to me was the fact that the boy had had typhoid fever but a few months before and had been able to resume his school duties only six weeks previous to my visit.

My attention was painfully called to the boy by his active, alert mentality, and the nervous, agitated tremble that characterized his muscular action. My lunch was spoiled, for I felt that I had an unpleasant duty ahead of me as soon as we left the table.

I went with the father to the library to begin my crusade in the boy's favor. I asked the father if, when the boy was eighteen years old, he did not want to have him able to come up and say, "Pop, don't you want to do so and so," and to speak in a hale and hearty manner of some anticipated fishing trip or day's outing? And then I told him that he had to do something for that boy, if he wanted to have him for a companion such I knew he looked forward to his being to him.

With all of his experience and study along the line of mental medicine, my words seemed to fall on his ears like the report of a bomb. I told him the boy should be taken out of school at once and turned out in the country where he could go to bed at nine o'clock and get up when he pleased; to eat plenty of bread and milk, ride horseback, fish and read novels, but to let study alone; chop wood or do anything that a wholesome farm life might offer.

I afterwards understood that the father sent for his son, told him what I had said and gave him his choice of following my instructions or of doing as the child pleased; although the father said, "It is my wish that you follow Doctor Kinney's advice."

Nearly a year after, I had a letter from the father that was one of the best letters that I have ever received, filled as it was with expressions of appreciative gratitude for what my chance visit had brought to his son. He re-entered High School, it seems, the next Fall, with twenty pounds weight added to his credit, with a reserve of energy coming from a Spring and a Summer of well-directed pleasure. He easily regained the lost time in his class and graduated with special honor.

The next I heard of him was that he had taken a gold medal for all-around proficiency in the entrance examination to one of our

leading Universities. He was soon made Captain of the foot ball eleven, and was continuing his physical gain, carrying with it a mental reserve that gave the greatest of all pleasures to his parents.

Many of the cases that have come to me for treatment are the direct results of what may justly be called culpable negligence on the part of parents. The ambition that the father or mother have that their child may do as good work, stand as high or higher than that of some neighbor or friend, brings out misfortune for many a poor boy and girl, who, were it not for these ambitious hopes of the parents, would be able to get through their school life and into the world with a fair degree of reserve energy and hopefulness during the growing years. Nervous overstrain is one of the things to be most carefully avoided in a young person's life. If you early instil the habit of worry it will handicap every faculty that it is necessary for that child to put forth, and I believe that this early indiscretion of parents in many instances has a great deal to do in creating a condition of dementia where, under other circumstances, it would not have manifested itself. We have only a certain amount of mental reserve and resistance to the wear and tear of life. No half a dozen of us are equally balanced in that respect. One may be able to work seventy-two hours unremittingly and show no signs of it two days after the strain; another one of us, were we to attempt it, would be practically out of the running for a while, and we would likely date our ill-feeling from our period of overstrain. It is for this reason that we can account for the premature senility that we often run across. The active, healthy use of our mentalities strengthens them when properly used; but where they are improperly used and there is any predisposition for nervous or mental diseases in our family tree we break early and an enfeeblement of mind in some one or more directions is bound to follow. I think that in the matter of my friend's son had the high pressure continued for another two weeks an attack of meningitis might have easily resulted.

Case 2—Epilepsy is not an easy disease to handle, as the majority of cases arise from causes that make it very difficult if not impossible to correct or modify. In some instances, epilepsy may arise from sources that we are able to correct and in this way re-

lieve the sufferer. Where epilepsy arises from indigestion or intestinal irritation such as is induced by worms, the treatment is comparatively easy. Where it arises from sunstroke or from gross brain disease, as is more frequently the case, the task is disheartening. In traumatism we are frequently compelled to resort to trephining where there is any depression of bone and that too as soon after the accident as possible.

We have, however, a remedy in Hypericum Perfoliatum Tincture, which old Doctor Lilienthal used to characterize as the "arnica of the nerves." I do not know that any better short description can be given of the character of cases likely to be helped by hypericum than this remark of Dr. Lilienthal.

A few years ago I had a trained nurse in my employ, who was unusually competent and faithful; but I was surprised to find after she had been with me for a while that she was a subject of epilepsy. It had been caused by a practical joke of which she accidentally became the object, resulting in a fall on her back, striking her head violently on the floor. She was unconscious a short time after the fall, but there was no fracture of the outer table of the skull, and in a few days after the fall she seemed to be as well as ever; but in three months from that time epilepsy, for the first time in her life, developed itself. She had taken freely of the bromides and was in hopes that this treatment would help her and at that time she came into my employ. She had the true, old-fashioned epileptic seizures, and after she told me her history I began giving her Lloyd's Specific Tincture of Hypericum, five drops at a dose, four times a day. As the true situation forced itself upon her mind she became quite depressed over the probable outcome of her condition. She, however, took her medicine regularly, dropping all other treatment for the epilepsy, and in a short time began to improve, to feel better, less depression, more elasticity of spirits, and she had a certain indescribable feeling of well-being that she had not had since the injury and more of a return to her normal self.

She had no more attacks and afterwards left my employ, feeling thoroughly well and finally married. I heard from her two years after marriage and she was then happy. A child had been born to her which was strong and healthy. There had been no return or any symptoms of epilepsy.

The third case is one of well-marked muscular atrophy, occurring in a young man of twenty-one years of age. The diagnosis was verified in this instance by Edward C. Seguin, of New York City, one of the best diagnosticians in nervous diseases that the College of Physicians and Surgeons ever had. He recommended iodide of potash; said that it would not do any good, but that the man might possibly live two years, but not much longer. He was told the history of the case at the time; that it arose from overstrain and an injury occurring to the brachial plexus. This, however, did not modify his diagnosis or suggest to him any line of treatment. The young man was particularly ambitious and had hopes though the unfavorable prognosis was rather depressing for him to contemplate.

Hypericum was tried after a number of other remedies had been exhibited without success. It was found that the twitching of the muscles of the thumb and forearm lessened after taking this drug. He finally, after having nearly lost the use of his right arm and hand and with well developed atrophy of the pectoral muscles of the right side, became in the habit of taking hypericum whenever he felt any unusual twitching of his muscles. After he began doing this there was no more progress in the disease and for the last twenty-five years he has been a self-supporting member of the work-day world.

My fourth case is one that I presume you will all consider that I owe you an apology for presenting, but the lady came to me after several thoroughly well-informed Old School physicians, several of them her relatives, had prescribed for her. Some homœopaths who had given her high potencies recommended that she come to me, which she did, asking me to help her in the treatment of urticaria. This eruption came out first from eating one thing and then another, until finally, although a cultivated, college-bred woman, and carefully watching her symptoms, she was unable to tell with any degree of accuracy what caused them and how to prevent their appearance. The discomfort that she experienced had induced her to take morphine in order to get a little rest from the pain, but this she detested and did not want to use, and no actual habit had thus far arisen from its employment, outside of what seemed to her the necessity for its use when the itching became intolerable.

Never having made a specialty of urticaria, and knowing that she came from those who had seen many more cases than had come to me, I felt very much annoyed at the prospect I had before me. I was at that time studying Echinacea Angustifolia. As has been truthfully said of Echinacea, "it is the most positive antagonist of blood dyscrasia." It antagonizes changes in the blood, morbid accumulation or products otherwise picked up by the blood in its course through the body. Auto-intoxication, whether acute, or slowly progressive, well expresses one of the conditions met by this drug. On these indications Echinacea was used, three drops every two hours. There was no belief on the part of the patient that she was likely to find relief and as the weather was warm it seemed as if everything that could aggravate her condition existed.

She, however, did well, and a postal card from her within the last month, tells me that she has been well during the past three years and has been busy at work. When you consider that this condition had existed off and on at varying intervals for years, the result is not only pleasing but a matter of surprise.

Case 5—M. P.—Admitted December 5, 1908. Housewife, widow, two children; education, common school; religion, Protestant; nervo-bilious in temperament; heart's action weak; temperature, 98; pulse, 90; unable to retain anything on her stomach; bowels move infrequently; has not menstruated for months; speaks in a whisper; sleeps poorly; restless in manner; smiles most of the time, although she cries easily; believes that she cannot get well; too weak to walk; emotions altered; put in bed.

This is said to be the second attack; duration of present attack being since April, 1908; has really been ill for two years. On admission, friends say she has had severe headaches, backache, and neuralgia; unable to retain food; does not sleep; has been having veronal, five to ten grains; and hyoscine hydrobromate 1-25 grain, at bed time. Is a pale, anaemic little woman who laughs constantly, and without cause. Is unable to enunciate her words clearly; says she suffers from severe headaches; wears a pessary on account of displacement; is constipated; unable to retain food and vomits on attempting to eat; lies curled up in bed and feels unable to help herself in any way. Heart's action is weak and variable, sometimes intermitting, then it would be regular, then increase to 112 to 115

in a minute. Her condition changes from hour to hour during the day, at times having intense headache, which would dominate all other symptoms, then there would be naseau, during which no medicine could be retained. This would be followed by pains in her abdomen. Was depressed in mind and hopeless; feels that she cannot get well and there is little or no use of trying to do anything for her.

Is to have massage, oil rubs, oil enemas, and trophonine four times a day; and ignatia first, every two hours. Nurse was instructed to keep her as quiet as possible, allow no visiting and to give her such food from time to time as she expressed any preference for or thought she could eat. This condition did not change in some days and the patient began to get weaker.

December 15 she was given four saline infusions, one pint at each injection, two in her breasts and two in her sides, as she was not able to retain any nourishment. Nutritive enemas of hot milk and trophonine given once daily. On giving the nutritive enemas, she would retain them only for a short time and then voluntarily expel them. She seemed impelled by a desire to do the very thing that is not wished of her.

December 20—Little or no change. Tossed and rolled about the bed with constant restlessness; would not stop; would not take medicine; believed that she could not breathe and appears to be dominated by a capricious desire to have her own way in every respect. Was given a small amount of chloroform when she became unconscious and slept for an hour and a half.

January 1, 1909—These conditions vary from day to day, and there is hardly any symptom that she would not exhibit for a longer or shorter period. Occasionally would not pass her water and had to be catheterized. Sleep was poor, seldom more than an hour's sleep at any one time during the night.

February 1—Appears to be physically a little better, but is very whimsical and capricious in her tastes. Believes that she is incapable of doing simple things for herself which her strength indicates possible. She has a patch of eczema on the third finger of her left hand, the eruption of which is vesicular. This so strongly suggested Rhus that I gave it to her in the 30th every two hours. The symptoms that she evidenced were not strongly suggestive of this

drug until I tried to fit the drug to her case, and then it seemed a very good remedy for her.

February 5—Is improving in appearance and ability to retain food. The eczema is drying up and decreasing in size.

February 15, 1909—Very much improved physically and mentally. Eczema scarcely shows. Is up and around her room. Complains less; does not have headaches; bowels move regularly. Massage continued and while she apparently does not gain rapidly in physical strength yet she seems to be doing well.

February 25—Patient is improving in every way. Eczema has left her hand and she goes out walking daily.

March 20—Patient seldom has headache. Retains food; takes massage without difficulty; nutritive enemas no longer given. Sits up and talks with other patients. Goes out walking daily and seems to be thoroughly enjoying herself.

April 1—Walked down town with her nurse. Went through the stores and was very much interested in the display shown. No bad results from the walk and the patient continues to do well in every respect. In fact there has been a complete transformation.

April 10—Her brother came for her and took her home.

Discharged—Recovered.

Question: Did Rhus 30th accomplish this,

HOMŒOPATHY.
A SYSTEM OF RATIONAL THERAPEUTICS—ITS RIGHT TO SURVIVE.

J. H. M'CLELLAND, M. D., SC. D., PITTSBURGH.

Our much respected President has done me the honor to insist that I shall take up the story of Homœopathy, and present it to this Society as it appears to me after a somewhat extended and consistent practice of it for a period of forty years.

To most of you, this will be more than a thrice told tale, but every presentation of the truth must serve to confirm the faith of some wavering believer or awaken the interest of the indifferent or skeptical.

Let us consider in due course, what are the essential principles of

our System of Therapeutics, their claim to belief as scientific verities, and, such being the case, the propriety of continuing them as living, practical and distinct forces in the Science and Art of Medicine. In other words, is Homœopathy a system of rational therapeutics, and as such, has it a right to survive?

I make use of the term "rational" advisedly, for it was Hahnemann himself who first applied it to the system of therapeutics which he had evolved, and to which he applied the name "Rational Medicine." This was the first time in the history of the healing art that it had assumed sufficient definiteness of form to justify the scientific world in recognizing a rational system of therapeutics.

Doubtless Hahnemann, who was a scholar of rarest erudition, was entirely familiar with that early exposition of logic, called by its author, Aristotle, THE ORGANON, and which proposed to extend the confines of human knowledge by the exercise of REASON. None the less, also, was he master of that guide to the acquirement of knowledge by the more certain method of practical research and induction which Bacon introduced in his NOVUM ORGANUM.

Familiar, I say, with both of these, and imbued with the spirit of both, Hahnemann gave to the world that incomparable volume, "The Organon of the Healing Art," reducing to concrete form the facts which had come to his knowledge in his search after truth, and which he had subjected to the methods of severest induction, as well as the most rigid requirements of logic and scientific formula.

We are quite willing to admit that probably all of what might be called the unessential theories and speculations regarding disease and drug action contained in Hahnemann's writings are not compatible with modern scientific investigation, and, I dare say, there are few even of his most devoted followers who would claim infallibility for him, but it is also true, that compared with the theories and practices of his compeers at that time, Hahnemann was a full century in advance of the most advanced of them.

And further, that one by one, have the deductions and even speculations of Hahnemann turned out to be the very truth, as proved by the startling revelations of modern science.

It is my purpose to lay before you some of the proofs of this contention, however trite and however familiar. In doing this, I may

trespass on your patience to an unjustifiable extent, and perhaps what is worse, make use of the laborious accumulations in the same field of many of my indulgent colleagues whose pardon I crave, and to whom I make cordial acknowledgment.

But let us first consider for a moment the STATUS MEDICUS of the period in which Hahnemann lived, that we may the better realize by deadly parallel the vast changes he brought about in the treatment of diseases by his discoveries and masterful deductions It is historically true that medical practice at this time was without chart or compass, consisting mainly of the *ipse dixit* of this man or that, and, however well meaning their efforts were, to all intents and purposes they were in entire accord with the operations of the venerable gentleman with the scythe.

The Schools talked of Hipocrates, Galen and Celsus, as if medicine had made no appreciable advance since their day, as was indeed well nigh the case. No less a modern authority than John Syre Bristow before the British Medical Association has indicated the state of scientific (?) medicine at the close of the eighteenth century, in language not to be misunderstood, and I introduce it here as an authoritative and forceful statement of facts. He says:

"He (Hahnemann) saw through the prevalent therapeutic absurdities and impostures of the day; he laughed to scorn the complicated and loathsome nostrums which, even at that time, disgraced the pharmacopœias; and he exposed with no little skill and success the emptiness and worthlessness of most of the therapeutical systems which then and theretofore prevailed."

This manly tribute from a recognized leader in the dominant school, comes with peculiar grace, and might be imitated with increasing propriety by his colleagues and successors as modern science continues to unfold the harmony of its revelations with Hahnemann's century-old deductions.

Examples could be endlessly multiplied showing the pitiable condition of medical practice—senseless and destructive of human life—but the scholarly Dudgeon, in few words, gives us the conclusion of the whole matter.

He says: "From want of a guiding principle for ascertaining the curative properties of medicines, therapeutics had degenerated into a

senseless farrago of uncleaness and absurdity, a *caput mortuum* of inert rubbish, a cesspool of filthy abominations, and a torture chamber of painful and noxious appliances. But, though some of the grosser elements were discarded by the contemporaries of Hahnemann, the therapeutics of his time, and for many years afterwards, remained as irrational as ever."

We add to this a word from the genial Oliver Wendell Holmes, genial to everything save the new school. He refers to the past of his own school as a "burnt district. Here and there a tree may be standing, but the eye ranges over charred and lifeless trunks with their feet in the ashes of their leafy raiment." (a)

This, then, was the condition of medicine when Hahnemann, like the shepherd lad of Bethlehem, went forth single-handed and alone to battle with the giant errors which until then had prevailed. Had Hahnemann but exposed and overturned intrenched error alone he would be entitled to all the honor a deliverer might receive from a grateful people, but he did vastly more than this, he founded a system of scientific therapeutics, based on natural law, as we believe, written by the hand of almighty God.

It will be entirely pertinent at this time to inquire,—What does modern medicine offer in the way of systematic therapeutics, and what relation does it bear to Homœopathy?

Gladly we admit, not the destructive and abominable measures of Hahnemann's day and for nearly a half century later,—not the drugging and shedding of human blood (the leading medical journal of the world is still called "The Lancet") as counted for science in that halcyon period, but distinctly included under two propositions, briefly stated we have MEDICAL NIHILISM and HOMŒOPATHY, confirmed.

No judgment can be more historically accurate than that which is founded on that *ad hominem* principle of the Sacred Code, "Out of thine own mouth will I judge thee" (Luke XIX., v. 22).

To this end, I will first offer in evidence a deliverance of Dr. Osler, recognized as the present leader of modern medicine, who says: "A new school has arisen which cares nothing for homœopa-

(a) Boston Medical Journal, 1882, Vol. CVI., p. 505.

thy or so-called allopathy, but has firm faith in a few good well tried drugs, little or none in the great mass of medicine still in general use." Again he remarks: "He is the best physician who knows the worthlessness of most medicines." We feel like using the homely phrase, "Speak for yourself John."

Dr. Billings, recently President of the American Medical Association, remarks: "Drugs, with the exception of quinine in malaria and mercury in syhillis, are valueless as cures." Then follows Dr. Cabot, of Harvard Medical School, in an address (to his credit) before the Boston Homœopathic Medical Society, who said: "I doubt if you gentlemen realize how large a proportion of our patients are treated without any drugs at all, and how little faith we have today in the curative power of drugs." In fact, the present nihilistic attitude of medicine has been summed up by a member of the dominant school as "Osler's black, hopeless, helpless, therapeutic pessimism."

It seems to me one need go no further to substantiate my first proposition, that the new medicine as announced by its sponsors, is simple nhilism, except as pertains to the two or three drugs mentioned, which I shall show, are used in entire accordance with the principles of Homœopathy.

Billings, just quoted, might easily have discovered why these two drugs, which compose his whole working materia medica, are so successful. The answer is furnished in Potter's (old school) Materia Medica and Therapeutics, page 342, in which he fortifies his own opinion on the action of mercury, by calling in the testimony of a much quoted author on Materia Medica, as follows: "Indeed, as Dr. Ringer said in the earlier editions of his Handbook of Therapeutics, the phenomena produced by mercury are singularly similar to those which result from syphillis, and the serious symptoms known as secondary and tertiary syphillis can be produced both by syphillis and mercury."

Why not say, gentlemen, in common honesty, that this drug is absolutely homœopathic to the disease it cures, and we would supplement your statement with the declaration that this is true of all drugs in their relation to disease. Men of the intelligence of Drs. Billings, Potter and Ringer should recognize this instantly.

As to the second member admitted to this select pharmacopœia.

quinine, it is enough to note that it was the singular similarity of the effects of this drug to the malarial disease it was heralded to cure, that was responsible for the discovery of the homœoapthic law itself. So thus far in our inquiry, we have encountered nothing but homœopathy out and out.

Well, then, let us see what principle underlies the major section of the new medicine as practiced today with such thrilling enthusiasm by our colleagues of the dominant school, namely, the employment of vaccines or serums.

Let us note first, however, that cowpox vaccination for or against smallpox, although not of recent origin, *is homœopathy pure and simple*, and its efficacy can be explained on no other theory or principle.

But to proceed. It was Pasteur, although not a medical man at all, who laid the foundation for all this modern therapy save vaccination. Upon the announcement of Pastuer's discoveries the medical profession, as we well know, started on a wild hunt for germicides, but with very indifferent success. After much hard work in the laboratory, however, with confirmatory clinical observations, something like a working basis has been evolved. Theobald Smith, of Harvard, observes (Journal of A. M. A., 1906): "We have not only retraced our steps to the whole bacillus, but even to the living attenuated bacillus * * * * to the old first principle of Pasteur." Now my colleagues, what is this principle? Let no less an authority than Professor von Behring, of Berlin, answer this momentous question. This fearless savant, this imperial seeker after truth, answers it thus:

"In spite of all scientific speculations and experiments regarding smallpox vaccination, Jenner's discovery remained a stumbling block in medicine till the biochemically thinking Pasteur, devoid of all medical classroom knowledge, traced the origin of this therapeutic block to a principle which cannot be better characterized than by Hahnemann's word HOMŒOPATHIC. Indeed what else causes the epidemiological immunity in sheep, vaccinated against Anthrax, but the influence previously exerted by a virus *similar* in character to that of the fatal Anthrax virus? And by what technical term could we more appropriately speak of this influence exerted by a

similar virus than by Hahnemann's word Homœopathy?" Von Behring, in the same article, further says: "I am touching here upon a subject anathematized until recently by medical pedantry, but if I am to present these in historical illumination, dogmatic imprecations must not deter me. They must no more deter me now than they did thirteen years ago when I demonstrated before the Berlin Physiological Society the immuning action of my tetanus antitoxin in infinitesimal dilution." And further on the discoverer of diphtheria antitoxin concludes: "If I had set myself the task of rendering an incurable disease curable by artificial means, and should find that only the road of homœopathy led to my goal, I assure you that dogmatic consideration would never deter me from taking that road."

These brave admissions, that the new therapy is founded on the laws of similars, is matched by the generous words of another brave and gifted man, Dr. Cabot, of Harvard Medical School. He says, in a defense of his own craft: "It has been just to charge our school in the past with the absence of any principle or law of therapeutics, and to contrast the order and system of homœopathic treatment with the helter skelter, *omnium gatherum* of merely empirical methods. But the contrast is no longer just. Homœopathy has a well-defined law which has been established empirically and is constantly and properly being subjected to re-verification through careful experiments. We also, at last, after much groping and long years of work, obtained a law of therapeutics, a principle of therapeutic effort, namely, *the principle of immunity*—natural and of the means by which it may be obtained, augmented, protected." It is generous to accord our claim to natural law as the basis of our therapeutics, but as pointed out by McConkey, of San Francisco, in his admirable paper, the credit of this new principle must be given to Pasteur, a scientist, and not a member of any medical school, and as shown by von Behring, is simply the law of similars, as discovered by one Samuel Hahnemann.

But there are other noble men, who dare admit the truth, and I shall quote but one more in this connection. Dr. Amalio Gimeno, Professor of Therapeutics in the Faculty of Medicine in Madrid, and former Minister of Public Instruction, has recently issued the

following remarkable statement: "As the author of a treatise on therapeutics that I published twenty-five years ago at Valencia, which became classic in the Spanish Faculties, I deplore sincerely having consecrated several pages to unjust attacks against Hahnemann and his disciples, and I would like to be able today to tear these pages from my book. Modern discoveries, however, will charge themselves with the care of correcting them. It is most proper that we should venerate the grand figure of Hahnemann who discovered that which subsequent events sanctioned." It has truly come to pass that modern discoveries are correcting the unjust estimate of Hahnemann and homœopathy, by proving that modern therapeutics, in so far as they are successful, are founded on the law of similars.

We must not fail to make our acknowledgments and express our gratitude to the earnest, fearless men who have extended the confines of our knowledge along practically new lines, and have been manly enough in many notable instances to admit that the meaning of it all is a confirmation of this law of similars. Having mentioned something of the state of medicine in Hahnemann's time and the present day developments, it logically follows that we should now consider our own cause from our own point of view, and this we shall do quite briefly.

We are here today to affirm that the great central truths brought to light by Hahnemann and laboriously developed by him, not as a single discovery, but as a result of years of patient experimentation and inductive reasoning, is a coherent system of medicine founded on natural law.

We must, in the beginning, clearly distinguish the difference between the Science and the Art of Medicine. Dr. William Boericke, in an excellent paper recently published, has also called our attention to the necessity for this.

The science of homœopathy or of medicine, if you please, has for its foundation a definite principle fairly well expressed by the formula SIMILIA SIMILIBUS CURANTUR. It is pertinent to inquire, why should this be called a *law* of cure. We answer, because repeated experiments on the healthy human body with drugs, establishes the fact that they produce symptoms or conditions pre-

cisely similar to the symptoms and conditions which we find in disease. That this is true not of mercury and quinine alone, or any other one or two drugs, but of all drugs. As a striking example of the similarity of drug effects to that of disease, I will only mention the well-known similarity of the poison ivy to erysipelas. But this is not all. Many persons who have been poisoned with the ivy, assert that for years after the original poisoning, they have recurrences of the eruption. We know this is also true of erysipelas, showing how remarkably the effects of drugs simulate or correspond with those of disease.

What more likely or more reasonable than that this inherent and persistent quality in drugs and medical agencies in general, is the key and guide to their application to disease. In individual cases, from Hipocrates down to Billings and Ringer and Osler, this has been admitted, but it was Hahnemann alone, who, by methods of science and philosophy, demonstrated that it was a general truth, applied to all drugs.

Secondly, the truth of this cardinal generalization has been tested and affirmed by thousands of reputable practitioners during the last hundred years, and is susceptible of proof by any competent observer at any time.

The science of homœopathy, therefore, rests upon the basis of natural law.

The practice of homœopathy, however, as of any system of medicine, is distinctly an Art, and as practitioners of a scientific method, we follow, or should follow, the rule of practice evolved by Hahnemann (and it is the only way he ever expressed it), namely, SIMILIA SIMILIBUS CURENTUR: "let likes be *treated* by likes." Right here the difficulty lies, "Art is long," and in this case the difficulties in the way are great. A Materia Medica in its broadest sense must not only be created, but mastered, and one must have the ability to intelligently use it. Wanting in this, many a practitioner even when a firm believer in homœopathy as a Science, fails in the application of it as an Art, and is driven to the use of all sorts of palliatives and adjuvants, as a consequence. The creation of a Materia Medica was a great work. Following the suggestion of the distinguished Albrecht von Haller, Hahnemann proceeded to

find the genuine sphere of drug action by provings on the healthy human organism, and the correctness of this method is now freely admitted by scientific men of all shades of medical opinion. We find a confirmation of this necessity in the experiments reported by Vaughn and Novy, p. 26, with regard to the action of bacteria: "A given bacterium may not multiply in the blood of a dog, and failure to do so is by no means proof that the same organism might not cause disease in man." This is also true of drugs, and hence the necessity pointed out by Haller, and carried out by Hahnemann, for the creation of a Materia Medica founded on the proving of drugs on healthy human beings.

I mention another corollary quite necessary to the successful application of our Art, and that is the preparation and proper method of applying drugs.

Hahnemann early found that the administration of crude drugs, when in accordance with the law of similars, was not only ineffective but actually injurious. His experiments and deductions led to the discovery that trituration and dilution greatly increased the medicinal quality of drugs. This generalization has been adopted by his followers, as a rule, but late scientific investigation confirms this also. Our Dean Copeland has gone into this subject thoroughly, and although I do not quite agree that the effect of infinitesimal doses upon ultimate cells is chemical, rather than vital, still it is most interesting to observe the attention given by modern scientists to the wonderful power of infinitesimals. I cannot refrain from quoting Dr. Cabot once more, referring to the use of Tuberculin. "The poison of tuberculosis, which can produce some of the symptoms of tuberculosis is here applied in small doses for the cure of tuberculosis through the production of immunity, or resisting power in the tissues. Surely (he says) this is a case of SIMILIA SIMILIBUS CURANTUR, as homœopathic writers have pointed out. The use of bacterial vaccines in infective diseases recently produced by A. E. Wright is distinctly homœopathic. But the revival of tuberculin therapy within the past ten years, after its abandonment in 1890, illustrates the victory of another homœopathic doctrine within our school. I mean the doctrine of the occasional utility of very minute doses. What dose does he (Trudeau) use? Not the 10

mg. often employed in the early nineties, not even the 1 mg. or the ½ mg. recommended later. At present he begins his treatment in non-febrile cases with one ten-thousandth of a mg., and in febrile cases with one one-hundredth-thousandth of a mg. What fixes this dose? Precisely the homœopathic principle, viz., to produce a definite good effect without any observable ill effects. Much more to the same purpose from highest authorities could be added, but time and space forbid. Enough to know that *all modern research reveals and confirms the potency of imponderables.*

How medicines, especially infinitesimals, act, has been a bone of contention always. We are somewhat familiar with Hahnemann's explanation, based practically on the vitalist theory, and he has many able supporters to this day. We take for granted that disease, at least primarily, and from whatever cause, is a disturbance of function, as Hahnemann, in 1813 declared, i. e. "as the condition of the organism and its healthy state depend solely on the state of the life which animates it, in like manner, it follows that the altered state, which we term disease," etc., etc. This principle is confirmed nearly a century later by the founder of cellular pathology, the great Virchow, when, he announced the doctrine, as late as 1897, that "pathology is but a branch of biology, i. e., *disease is life under altered conditions.*"

Whether medicines act on the organism chemically or not, we may be quite sure that the "state of the life that animates it" is an important factor. The once familiar phenomena of the fly blister, might well illustrate this truth. The application of the Spanish fly, as was often observed, to the person whose vitality was well up to the standard, was quickly followed by the desired blister; when the vitality was at a low ebb, the expression was, "it does not draw well"; and when life was extinct there was no effect at all. The chemical composition of the plaster and of the body surface remained the same.

But it is most interesting to note some modern efforts to explain the *rationale* of disease producing agencies and remedial measures as well.

The bacteriologist affirms, that diseases are caused by the toxins produced by the active bacterial germs on receptive cells.

That toxins are formed in plants also in a corresponding way, is now strongly intimated by competent authority, as follows: "Poisons may be produced by the cellular activity of bacteria much the same way as morphia is formed in the poppy." (Vaughn and Novy, Cellular Toxins, p. 22, quoted by Dr. Dean Smith of Ann Arbor.)

Now, while the eminent gentlemen just quoted, and their fellow scientists, Wasserman, Weigert, Cushney, et. al., are endeavoring to find a reasonable hypothesis for the action of poisons, and while it may be found that disease germs act, let us say by the production of toxins, or disturbed cell chains (Erlich) or what else, let us "thank God and take courage," that drugs and other effective agencies do produce on the human organism a reactionary impulse toward health, and of this we have ample proof.

It does not follow, in order to be a thorough believer in the Science and Art of Homœopathy, that one must accept all of Hahnemann's theories. The exact amount or method of dilution may properly be questioned, yet we need not hesitate to accept the fact, that trituration and dilution do increase the curative power of drugs. We need not agree that the thirtieth is the only, or even the best dilution, nor is it necessary to believe that repeated succussion without dilution is all that is necessary to develop the curative power of a drug. Jenichen, we find, prepared his four-thousandth dilution by percussing the fourth four thousand times, and there have been other honest enthusiasts whose pharmaceutical methods have been equally misleading, and at variance with Hahnemann's careful instructions.

The minute doses of homœopathy have ever been the stumbling block to its adoption, especially after the germ theory (which was foretold by Hahnemann in discussing the probable cause of cholera) was produced by Pasteur. For a time the germicide was the only thing in the treatment of disease, and if so, to what purpose was the infinitesimal dose of homœopathy? This germicide method, however, has been short lived, and the serum therapy based on the more rational principle of Similia, is now in the ascendant.

No one, for a moment, disputes the self-evident fact that the healing art embraces much more than what has been called "internal medicine." All freely admit that there are, in addition to the

mechanical branches, surgery and obstetrics, many ancient and modern systems and devices available, and of more or less merit. Hydrotherapeutics, electrotherapeutics, phototherapeutics, especially the x-ray; massage, gymnastics, with their modern development osteopathy; the overworked dietetics; psychotherapeutics; et hoc genus omne, all have a more or less important place in modern therapeutics. But even here, homœopathy supplements and aids the honest physician. Who will deny the invaluable assistance afforded the surgeon and obstetrician, in controlling many of the complications which arise?

Further than this, our guiding therapeutic principle is of inestimable value in directing the use of heat and cold, of water, the x-ray, and even mental therapy. Shakespeare says, "and this news which would have made me sick, being sick, hath in some measure made me well." But the most astonishing development has been in the use of the x-ray. The literature of this method contains many examples illustrating the law of similars. I am informed by the eminent X-Rayist of Pittsburgh, Dr. Johnston, confirmed by our own Dr. Pond, that he has seen many cases of epithelioma and other skin diseases produced by the use of the x-ray, and he and his colleagues have, over and over again, demonstrated the curative effects of what might be called the diluted or mild application of the ray.

So we may conclude, that as science opens up new vistas to our astonished vision, she reveals new and ever useful additions to our *Armamentarium Medicum* and further confirmation of nature's law, the intelligent application of which is for the healing of the nations.

In a desultory way I have touched on the essential principles of homœopathy, and may have made plain that they are founded on reason, established by all the requirement of scientific assent.

I feel justified, therefore, in the claim that Homœopathy is a system of Rational Therapeutics; that, in the light of modern research, its cardinal principles have been vindicated, and it has stood the practical test of over a hundred years at the hands of thousands of qualified practitioners, and in the experience of tens of thousands of grateful patients.

I even go further than this. I assert without fear of successful contradiction, that notwithstanding the brilliant array of medical

heroes from Aesculapius down, there has never been presented to the world a consistent system of medical practice which could bear the test of scientific investigation, until Hahnemann elaborated on a foundation of natural law the system of rational therapeutics—which we know under the name of homœopathy.

This being established, not by my poor words, but by the accumulated testimony of many much better qualified to speak, we may now inquire, has the time arrived or will it ever arrive, when homœopathy shall be swallowed up in the *omnium gatherum* of general medicine, and this without recognition, or even credit for the modifying influence, direct and indirect, that it has ever exerted on the practice of the healing art. Shall we ignore the benign influence it has had on former destructive methods resulting in the saving of tens of thousands of human lives.

DISCUSSION.

DR. JOHN R. GARRETTSON: It is not necessary to go any further, I am sure; there is a proof that homœopathy as a system of therapeutics has a right to exist. That has been proved; that has been shown. This paper is one which I am sure will be appreciated by many more than have heard it today; for it is one which certainly must be read by hundreds.

It seems to me that while we are here and amidst applause have signified that homœopathy is entitled to exist, and to continue to exist, it might be quite proper in the way of discussion to consider for a moment how it may be made to exist. The best way, undoubtedly, to exemplify the law which Hahnemann brought out, is to note its practical workings on the sick. A physician who is well versed in homœopathic medicine can demonstrate the truths of homœopathy. It has been noticed ever since homœopathy has been practiced, that a homœopathic physician entering into a community where it has never been practiced before very soon has patients coming to his office, who care nothing about the law of homœopathy, they know nothing about it: it is all because there is a new doctor there; but in a very short time the cures that he makes and the manner in which the cures are made, easily and promptly, are his best and the best advertisers of homœopathy.

Now, we know that we need to have a physician to exemplify

this law. The American Institute of Homœopathy at Kansas City a year ago said particularly that the proof of homœopathy was a necessity. That caused the Council of Medical Education to take upon itself the extra labor of devising the best means for propagandism. We have commenced that work; we know that it is necessary that it shall be done.

I might just in a few words tell you something about the work that has been done—the work being placed upon the committee. A fund sufficiently commensurate was voted; and the first labor to be performed was to get in touch with the student element. All the literary colleges throughout the country were corresponded with. In the first place, we were anxious to get into communication with the different members of the faculty, who favored homœopathy. Then we got in communication with the members of the senior classes; from them we received the names of those members of the senior class who had expressed a desire to study medicine, and to all of those we sent homœopathic literature, giving in a small way some of the elements of homœopathy and some of the reasons why students of medicine should select the homœopathic school. We have received the names of about 800 of those who are prepared to enter the study of medicine, and who have signified their intention of taking up medicine in some form; and those names were sent to every dean of a homœopathic college in the country without any favoritism on our part.

Now, we certainly need homœopathic students. We hope that the work we have done will increase the size of the classes of our colleges, and hope that we may have been a factor in that increase. It is a little too soon yet to know just exactly what the result will be; but as a straw which shows which way the wind blows, I might say we have heard from the only homœopathic college which has commenced its lectures this fall (which is the Homœopathic of San Francisco,) which sends us word that they have a freshman class of 31, which is almost as many as the entire enrolment of the year previous. In your own state I hope that the same may be said; I hope that the Hahnemann of Philadelphia may double its freshman class this year. You need them; you know that you need them. I do not know how many deaths have occurred among the homœopathic physicians of Pennsylvania this year; but I am very sure

that you will not have enough graduates from your college to supply those deaths plus the number which you will find necessary to maintain your institution in the state.

I might say in conclusion that this work has been commenced, and it will be continued in as large a way as it can possibly be done; and that while the American Institute of Homœopathy has not felt able to contribute largely this year, we hope by individual subscriptions, large or small, to be able to carry on the work to a successful issue. I thank you for your kindness.

DR. G. HARLAN WELLS: I will not attempt to speak any words of eulogy of Dr. McClelland's paper; because the paper speaks for itself. I would like to say that in speaking of some remarks that he made in connection with Dr. Cabot's work, I had the pleasure of spending several weeks with Dr. Cabot this summer and following up this work. I would like to say, in the beginning, that I have the highest regard for Dr. Cabot. I have worked with many physicians, and know of no man in this country personally who is of a higher professional standing, a more earnest seeker after truth, than Dr. Cabot. Anything that I shall say will not be derogatory in any sense of him.

Dr. Cabot is not a therapeutic nihilist, as many old school men unquestionably are. He does not believe in the allopathic treatment by drugs, just as we do not believe in it. That is not because he is in opposition to those drugs. He has used compound prescriptions—but the methods which he largely employs are not medicinal methods, because he has found the medicinal methods of the old school are failures. And the physiological medication that he uses at all is almost entirely the single remedy; and many of those remedies, as Dr. McClelland has indicated, are remedies having a homœopathic basis. In one of his discussions I recall very well that a professor from the Rush Medical College objected to his recommendations of tuberculin in the sixth decimal on the ground that it was homœopathic. He turned to him and said: "Doctor, do you offer that as a reasonable objection to a medicine that acts?" "Well," he said, "I do not like the idea of using homœopathic medicines." He said: "Doctor, the object that we are after is to find out the dose that gives results. That is, the dose that cures; therefore, I recommend it. That is my only defense."

The point in mentioning these facts is this: that just at the point where the advanced men of the old school are abandoning polypharmacy, the homœopathic school is beginning largely to take it up. This is not only true of the compound pharmacy regarding physiological medication, but also regarding our own medication. If you will talk with the agent of our pharmaceutical houses, you will find that there is a long list of compound tablets. The manufacturers do not make these tablets to amuse themselves. They make them to sell; and they sell them because the doctors want them. I can see some excuse for a combination of physiological remedies; I can see no excuse whatever for a combination of homœopathic remedies. I have had this matter very much at heart, and speak feelingly on it, for the simple reason that I find a great many men, especially the younger men in our school, have an idea that the old school have certain efficient and mysterious remedies of whose action we know nothing. This is positively untrue. And if I believed it before, I certainly believe it now, after having spent much time with some of the most brilliant men the old school produces.

There is another important fact; and that is, while Cabot had, in some of his discourses, being speaking of a national formulary which the old school were making great efforts to make popular among the profession in order to weed out the proprietary preparations, one physician spoke at length regarding how important it was that students and physicians should study the national formulary. Dr. Cabot said: "Doctor, I see no reason to study the national formulary. Ninety per cent. of what it comprises is utterly useless, and as soon as a man has spent his time in studying it, the best thing for him to do is to forget it; therefore, why study it?

The same thing is true of the treatment in neurasthenia. No one, perhaps, who has ever used bromides for neurasthenia can cite any actual cure produced by it; therefore, why give it? There is a therapeutic nihilism that Dr. Cabot has, it is a nihilism that Hahnemann had; and Hahnemann had tried the same thing that he tried and found it a failure. The important part of it all is, do not let us go back to what the old school is giving up.

DR. EDWARD CRANCH: I have been exceedingly interested in hearing Dr. McClelland's paper; and you would perhaps

like to hear of an instance similar to the one he gave. In reading the New York Medical Journal in the past summer, an article on pellagra (this disease so empidemic and so fatal in Alabama and the South, and through Italy, produced by a fungus on damaged corn), a doctor who was experimenting with it noticed, as others did, that it caused a remarkable thickening of the skin; and he says, "therefore" (just as the homœopathist would say,) "therefore my attention was directed to the treatment of psoriasis and I used the poison of pellagra and cured my cases of psoriasis." That is homœopathy; and that kind of homœopathy will surely survive.

Now, as to whether our organization will survive or not, that is another matter. When the discoverer of the circulation of blood announced his law that the blood circulated—came back to the heart—it was not during his own lifetime that it was received with any great amount of favor; in other words, his theory survived but he did not; and it may be so with us; we may be like the children of Israel, of whom all the fighting men died before they got into the land of Canaan; we may be all extinct before the truth of the laws of homœopathy survive; but they surely will survive. As to the present conflict for survival, we need a great deal more education of the people.

In Washington two weeks ago I was amazed at the ignorance one remark displayed. The lady who made the remark is the daughter of an eminent allopathic physician, and the sister of two others. She said: "I wish you folks had taken away that old statue put up by a lot of cranky women", (referring to Hahnemann's statute in Washington,) "and cleared it out of there." I told her it was not put up by any cranky women, but was put up by the combined efforts of the men and women of the American Institute of Homœopathy. "Oh!" she said; she didn't know that. In inquiring through the shops of Washington for a view of the Hahnemann statue, I was unable to find one, and had to take one myself. Then the conflict may be compared to the recent controversy that is now attracting the attention of the world as to who discovered the North Pole. We know that we discovered homœopathy. If the other man comes along and says that he is discovering homœopathy, we can say: "We got there first."

DR. AUGUSTUS KORNDOERFER: Somebody said to me:

"Korndoerfer, have you anything to say to that?" I say I always have something to say about homœopathy, for it. I can understand just how Dr. Cranch feels as to whether homœopathy will exist in our present organized form, or not. I would like to say right here that unless we get a little bit more backbone than a good many of us have shown during the past couple of decades, we have no right to exist.

What is wanted is belief in the truth, a faith in the truth; not a faith that gives itself out in words, but a faith that is manifested in acts. While faith will save, spiritually speaking, we are told that if we want to make known our faith it must be through acts. I had an old friend who said to an old peddler (an old woman): "Say! your church says by faith you shall be saved—or the Protestant says by faith we shall be saved; but you Catholic people say by works you will be saved. How do you make it out?" "Ah," says she, "I'll tell ye. You show me your faith without thy warks; I'll show thee my faith through my warks." He said: "I hadn't another thing to say.

Now, when our people show their faith through their works, the allopathic school will have no place to stand; the forces of homœopathy will be quite sufficient to throw down those walls; and just as the old Biblical history tells us, by simply walking around the city the walls fell. Now, while these figures may be utilized for illustration, we can safely say that there is in homœopathy that germ of truth well developed which will enable it to withstand all the machinations of the evil one. It is not a question whether homœopathy will stand; it is a question, shall we have the credit of having helped to support it; will others come after you who will look upon your name with disgust to think that the opportunity was passed by without your recognizing the truth and taking the opportunity to support that truth?

That is the question: not has it a right to survive, but have you a right to survive while homœopathy has been neglected by you—you who are getting the truth and having had it entrusted in your hands and to your keeping? That is the question you have to face today, and which must be answered by you; and in the name of all that is good, let us answer it so firmly, so forcefully, and so

positively, that the enemy will know where we stand, that we do not need to be ashamed, nor need to be afraid.

I have never yet seen the contest between the allopathic and homœopathic forces of this state or any other, where we had a few consistent homœopathists, where we needed to fear the combined forces of the whole old school. The truth will triumph; people will see it; and there is no danger. We are in danger through lukewarmness in our friends; and therefore let me urge upon you once more, before I sit down, that you hold aloft the banner of truth and make yourselves part of the moving power which will support the truth today and establish it for the future.

I want to thank Dr. McClelland for the paper which he has presented us; it was an inspiring paper; and if I were not on the 5-minute limit, I would have said a great deal.

DR. TRIMBLE PRATT: I have only a word that need not be taken down. But I would criticise Dr. McClelland for one thing particularly; and that was that he apologized for reading a paper which had been read before in whole or in part. It ought to be read at every single meeting, that same paper, without the change of a word. It ought to be printed, so that it would get outside of the records of the discussions of the state society. Because it is worthy of it. And I have never said very much; but most that I have said along that line for the support of the principles of homœopathy has been that if we live, if we grow, if we do anything, if we become homœopathists we must start at the fountain head. The teaching of homœopathy must be like it used to be forty or fifty years ago, taught by every professor in each homœopathic college—the surgical professor as well as the professor of materia medica and therapeutics. If we get a professor of materia medica, or therapeutics (it might be both, possibly) in one college, we think we are doing well. I am ashamed of it; and yesterday only I was in a homœopathic drug store and I was made to blush with shame, and I only wish that all the faculties of all the homœopathic colleges might have been there.

A lady came in there who had passed a half dozen stores, with a regular prescription, thinking, of course, that she had got it from a straight homœopathic physician—at least one she supposed was a straight homœopathic physician; and she brought it in there

to a homœopathic drug store, expecting to have it compounded; and when he told her, "No, we do not have the medicines in that form"—"Well, how far would I have to go?" "Well, you would have to go four or five blocks." "Well," she says, "I'll go home without it."

DR. J. H. McCLELLAND: I only want to rise to make my acknowledgments to the society for having so patiently listened to my poor effort. I did not have the time to condense it as I should have done; but I stand by the facts that I have laid before you, and I hope that there will be a reaction in the homœopathic ranks toward good Hahnemannian homœopathy. I don't mean, by that, that it need be high potency homœopathy, unless they want to; but it ought to be Hahnemannian homœopathy, scientific homœopathy, as has been practised by the new scientific school today; and I trust earnestly that the practice of polypharmacy which is cropping out and is being fostered by the pharmacy people, may be crushed out. It is not worthy of us; it is not worthy of the disciples of Hahnemann. I thank you very much.

BLOOD PRESSURE—ITS VALUE IN DIAGNOSIS.

O. H. PAXSON, M. D., PHILADELPHIA.

In the study of diseases, both acute and chronic, primary and secondary, it must be apparent to all careful observers that there are instances in the course of these various diseases when it is important to the physician to be able to recognize by the aid of physical signs the true condition of the heart and the circulatory apparatus.

There are certain physical signs well known, which, when present, will give unmistakable evidence of enlargement, of displacement, of valvular lesions, and to a limited extent degenerative changes.

There can be no more interesting subject of study and investigation than that of the vital force of the heart, a force upon which is dependent the healthful functions of all the organs of the body and ultimately life itself.

This motor, the heart, has a well defined work to do each day. For instance, in a normal heart there must be sixty to sixty-five

thousand cycles each day; there must be a force exerted in the same time equivalent to that which would move about one thousand gallons of fluid through the left ventricle, having an estimated weight of three and a half tons. Add to this the work of the right ventricle and the additional force required to overcome the pressure of the blood and the above figures may be doubled—not a mean amount of work for the size of the motor. It follows as a simple fact that if there is a normal load line of pressure, an increase or decrease of this pressure must increase or decrease the work of the heart.

Change of pressure in the blood may occur from various causes, either physiological or pathological.

An increase of pressure may act in one or both of two ways; it may not only increase the material work to be done, but of more importance still, it may set up changes in the cellular elements of the various organs and even in the circulatory apparatus itself, which will seriously interfere with their functions and so become a source of pathological changes.

The initial changes inducing such an increase of pressure may proceed from a pathological condition in some other organ than the heart, as for instance in chronic nephritis.

Acting upon the belief that this varying pressure above the normal is considerable of a factor in diseases, certain instruments have been devised to so measure it that these measurements may be used as a physical sign.

The ideal measurement to be obtained would be to do as it has been done in certain animals by connecting the column of blood in an artery with a manometer, by means of a rigid tube.

In man this is not practical and the instruments that have been devised in its place attempt to balance the pressure of the blood within an artery by graduated pressure applied externally.

There are three factors as the true cause of this pressure; first, the force of the heart beat, secondly, the volume of blood thrown into the aorta at each systole of the heart; and, thirdly, the peripheral resistance in the capillaries and arterioles.

These three factors being accepted as the source of the blood pressure, any change in this pressure from the normal will lead

at once to an investigation of any one or of all three of these sources as a possible cause of the change.

This pressure, as demonstrated with one of these instruments, is known as systolic, at that point where the radial pulse is obliterated; as diastolic, at that point where the maximum oscillations of the column of mercury are greatest; as the mean pressure by taking an average between the systolic and the diastolic.

This latter corresponds with the arterial tension as determined by the finger on the radial pulse, between beats. This mean pressure should be carefully considered. It is not unusual to confuse it with the systolic pressure or to be deceived by the thickened walls of the artery, as from sclerosis or hypertonus, into the belief that the pressure required to obliterate the pulse is due to the pressure from the blood. There may be a relationship between these two, but they are not one and the same.

Having determined that the resistance in the capillaries and arterioles is an important factor in the cause of increased arterial tension, a reasonable explanation of it was sought for and found, it is believed, in the poisonous products retained in the blood as the result of either deficient elimination of the excretory organs or else from added poisons from the disease itself. These substances act as irritants on the walls of the capillaries and arterioles, setting up a reflex spasm or hypertonic condition of their walls and creating increased peripheral resistance.

With this understanding of the blood pressure we have a working basis for the use of it as a physical sign in certain diseases. High pressure, as a rule, is of more significance than a low one. The conditions giving the lowest readings are shock, collapse and concealed hemorrhage. In visible hemorrhage attended by nervous excitement, fear and apprehension the pressure is raised. The acute infectious diseases, anæmias and cachexias and the terminal stages of all diseases show low pressure.

Considering the normal systolic pressure to be 100 to 130 for young adults; 100 to 145 for older adults; children 90 to 110; and infants under two years of age 75 to 90; the normal diastolic pressure as 25 to 40 below the systolic, in any one of these classes, I will proceed to illustrate some of the diseases in which this physical

sign may be of use, not only in diagnosis, but also in estimating the value of the treatment prescribed.

The first case is that of Mr. C., a gentleman weighing 240 pounds, age 61, active and in fairly good health except for various pains in the limbs, both upper and lower, which he ascribed to rheumatism. Also a fluttering sensation about the heart with paroxysmal pain. The heart symptoms were the ones that most concerned him as he feared that these symptoms, in connection with his size and weight, were the early evidence of serious heart trouble.

An examination of his heart showed it to be normal in size, rhythmical, 68 to 72 in frequency and no valvular lesion.

Urine normal; blood pressure 165.

Excluding the heart and arteries as the source of this increased pressure the explanation of it was found in that it was due to some irritant in the blood. Gout was diagnosed, and this diagnosis was further confirmed by the evidence obtained later of his wife, who said that he was a heavy eater of all good things, especially fond of meat, coffee and tobacco, and in the past had been a user of alcoholics to excess. A favorable prognosis was given with the understanding that a decided change in his habits and diet was essential to its fulfillment.

There are other constitutional diatheses, as diabetes and rheumatoid arthritis, which are frequently associated with high arterial tension. Over-eating, more especially excessive meat eating, may be a cause. In such instances, perverted or defective metabolism, with resulting absorption of toxic products into the blood, and imperfect elimination are the important etiological factors.

Typical instances of high blood pressure are found in association with chronic interstitial nephritis or granular kidney.

In such instances the high pressure is not due to the obstruction in the diseased kidney itself, but to the poisonous products retained in the blood as the result of imperfect elimination by the kidneys. Instances of this kind are frequently met with.

The high pressure is a valuable sign as an early symptom, in those cases where an examination of the urine is negative as to albumen and casts, and yet the symptoms suggest nephritis, as in the following instance: Case No. 300, male, age 67, occupation, attorney; weight, 136 pounds. An energetic worker. Complained

of pains about the shoulders and head; up at night to pass the urine once or twice; paroxysms of eructations lasting an hour; heaviness of the head and some tinnitus; occasional attacks of diarrhœa; irritability and lack of capacity for usual work; urine sp. gr. 1022, no albumen nor casts; heart rhythmical and 92 pulsations to the minute sitting; no murmurs; walls of the radial artery slightly thickened; blood pressure 160. Diagnosed as chronic nephritis. Subsequent examinations of the urine showed uric acid showers and numerous casts. Under treatment the pressure in three months' time became 135, with improvement in the other symptoms. Following a trip abroad with an absence of two months the pressure returned to 160. Still under observation. It is a good working rule, I believe, to consider the cases of this disease that show prompt lessening of the high pressure under treatment, to have a more favorable prognosis than those cases which maintain the high pressure although the other symptoms show a favorable change.

In the affection known as eclampsia the arterial tension is said by Broadbent to be extremely high. The explanation of this condition, as offered by him, is that though the kidneys are not diseased, the extra work of eliminating the waste products of the foetus in addition to those of the mother is too much for them and in consequence toxic products accumulate in the blood, as in the case of granular kidney, and produce similar phenomena.

If this is true then high blood pressure in a pregnant woman should be a physical sign of importance.

Case No. 338, age 41, female, single, occupation, bookkeeping; weight 170 pounds, and blood pressure 180.

To look at she is a woman to be picked out for her appearance of health. Her principal symptom is shortness of breath from little exertion. No asthmatic attacks. Cough and with a sweetish expectoration that suggests the taste of blood, yet none has been raised.

Urine is normal, the bowels are costive.

Heart examined and found to be regular with a frequency of 88 to 100 per minute. In the aortic area a loud murmur heard with the systole, transmitted upward along the right side of the sternum

to the right sterno-clavicular articulation where it was most audible, and also heard over the carotids in the neck.

In all stenotic murmurs the first point to determine is whether there is obstruction or not. Roughening of the orifice or valves, slight congenital malformation or a shred of fibrin hanging from the edge of a valve may give rise to a loud systolic murmur without giving rise to any appreciable obstruction to the course of the blood. Her history was good, there had been no acute inflammatory diseases and her age and personal appearance contraindicated any of the likely changes leading to stenosis. After a careful estimation of the size of the left ventricle and the character of the pulse in connection with the high blood pressure the diagnosis was made of a true stenosis.

Toxic substances introduced into the blood may be the cause of increased blood pressure. Lead will cause it and alcohol and tobacco are suspected. Knowing this the degree of blood pressure may be the deciding point in a difficult diagnosis.

Case No. 331 illustrates another point. Female, single, age 51, occupation a school teacher, weight 160 pounds, blood pressure, 200, pulse, 80. Symptoms mostly those as expressed in the patient's language as "nervous." Wanted to be braced up till the school term was over (this was June 5) tired in the afternoons, severe flushes of heat. Sense of great pressure in the chest as if unduly inflated, nervous chills, not sleeping well, wakes at night and then has difficulty in getting to sleep. Menses absent for the past six months, and have been irregular for more than a year.

The high pressure in this case is probably due to hypertonus. In hypertonus the condition of the vessel wall must be taken into consideration. The wall of the vessel varies greatly in thickness and elasticity in different individuals, at different periods of life, and in health and disease. In hypertonus there is contraction of the muscular coat almost amounting to spasm and in consequence of it the resistance to pressure is increased. With it at the same time there may be actual hypertrophy of the muscular coats which will intensify the resistance. Hypertonus, when present, exists throughout the arterial system and it is the narrowing of the vast network of arterioles which causes the increase in the peripheral resistance. This condition of the vessel walls may be mistaken

for that condition known as arterio-sclerosis, in which there is a more permanent thickening of the arterial walls, due to pathological changes and accompanied with high blood pressure, so long as the heart is enabled to overcome or is equal to this increased resistance. The pressure due to hypertonus is likely to vary more in a series of tests than a similar test, due to arterio-sclerosis.

Case No. 313, male, married, age 52, occupation, undertaker; weight, 225 pounds; pulse, 68, regular, and blood pressure, 125. This man is short set, florid of face, very active in his daily life, a hustler, fond of good food, yet temperate in his diet because of restrictions that have been put upon him, uses alcoholics and tobacco occasionally.

Urine has always been purulent when examined any time within the past five years. Albumen sometimes present in small quantities, sometimes absent. Sp. gr. 1015 to 1020. One or two hyaline casts are sometimes found in a single field and then again are absent.

Symptoms of so-called uræmia have at times been present.

Five years ago he was seriously ill after using a catherer for a few times. His illness then was due to faulty technique and a consequent infection, as he had not been instructed in the proper use of such an instrument. After frequent washing of the bladder and a month's careful nursing he was able to resume his daily business. He has chronic nephritis, with cystitis, and an enlarging prostate. The value of his blood pressure as a symptom is that it leads me to believe that elimination is good, and in consequence there are no toxic substances being retained in his blood to augment the pressure in his arterial system. While this elimination continues the pressure is likely to remain good.

Case No. 337, female, married, age 38, pulse of 120 sitting and 128 standing; blood pressure, 115.

Complains most of her heart thumping both day and night either when quiet or when moving about; fearful of dying and leaving her children; great depression mentally, with much weeping and tendency to talk of self destruction.

Heart examined and a pronounced murmur, systolic in time, was heard in the tricuspid area.

Urine examined and found to have a sp. gr. of 1015, no albumen, and but one small granular cast was found.

Eyes protruding with a white ring of sclerotic showing. Slight enlargement of the thyroid. Diagnosed as Parry's disease.

There is nothing diagnostic in this blood pressure, but it is of clinical interest to note that the pressure is not increased in this disease as determined in this one instance.

Brunton believes it is the internal secretion of the thyroid gland that quickens the heart in this disease as well as dilating the vessels. The fact that the vessels are dilated might be a probable explanation why the blood pressure is not increased.

In typhoid fever the blood pressure, as I have observed it, in a number of cases, is not significant unless a pressure below the normal is of value. In the cases that I made use of this test the pressure was between 85 and 100. The cases so far observed by me are too few to give any reliable data as to the course of the pressure and the possible variations due to various complications occurring in this disease. I am in hopes that some useful data may be found from observing a large number of cases and from many observations made throughout the full time of the disease from incubation to convalescence.

Case No. 318, female, age 24, unmarried, weight, 149 pounds; pulse, 80 sitting, and 96 standing; blood pressure systolic, 130; diastolic, 100. Complains of rapid heart action, palpitation, delayed and scanty menses, the flow being pale in color; hæmoglobin 40. Diagnosed as chlorosis. In this disease the deficient hæmoglobin seems to have no effect upon lowering the blood pressure.

A second case of the same disease, with almost identical symptoms gave a pressure of 130 systolic and 110 diastolic.

Cases Nos. 310 and 330 are cases of tuberculosis.

The first one is an instance of the disease arrested. Female, single, aged 37; occupation, school teaching; blood pressure, 110 systolic and 100 diastolic.

Family history, father and mother both died at the age of 40 of tuberculosis.

Three years ago the disease became active in her right lung in the apex. Since then she has been continuously under treatment, for one year in a sanitarium about twenty miles from Philadelphia and the remainder of the time in New Jersey. This latter part of the time, that is, for the past two years, she has carried out the same line of life as she learned at the sanitarium. Her daily

temperature is now 98.6 morning and night. A radiograph shows an area of consolidation in the right apex with a possible cavity. If the blood pressure becomes higher and finally normal it will be very encouraging and may be taken as evidence that the disease is under control.

X-RAY THERAPY IN DISEASES OF THE SKIN.

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It has been the history of the introduction of many a new therapeutic measure that extravagant claims are made for its curative effect, creating a wave of enthusiasm which meets with such general disappointment that it is thrown aside as useless. Later, after further investigation and experience in its use, it assumes its proper place in the medical armmaentarium. Especially has this been true in regard to X-ray therapy. Heralded as a cure for many diseased states hitherto deemed incurable or curable only by severe and painful operative measures, it was adopted by many physicians who had no conception of its action or of proper technic in its application. Their results were often *nil* or disastrous; disastrous, not only to their patients, but to the operators themselves, resulting fatally in many instances. When these facts became known, it had the effect of throwing this method of treatment into undeserved disrépute. One reason of the varied results obtained by different operators was due to the fact that we had no means of measuring the dosage; and, to a large extent, each one was compelled to depend upon his own experience and observation in its application, and, as the personal equation of the operators varied, so did their results. The X-rays have now been thoroughly tested by clinical use and experiment and the dosage fixed almost as accurately as that of any medicinal therapeutic agent; and to insure good results they must be applied as any powerful drug with a knowledge of their limitations and dangers.

Soon after the discovery and application of the rays for diagnostic purposes it was noted that in some of the cases a dermatitis of varying severity with loss of hair was produced. This was the beginning of X-ray therapy. Experiment and investigation have

been carried on until now we know its exact effect upon the various tissues. In the consideration and application of any therapeutic agent its physiological and pathological action should be well understood in order to apply it intelligently. In the use of no other remedial agent is this more important than in the employment of the Roentgen ray; for its rational indications depend upon its action upon living tissue. Briefly described: its first action upon the skin is stimulation, followed by a superficial dermatitis and pigmentation. When carried further the dermatitis becomes vesicular and after this a cyanosis of the skin; and still further exposures cause a degeneration, first of the more highly differential appendages of the skin, the nails, the hair follicles and glandular structures. The skin becomes dry and wrinkled, and papilomatous growths develop. Subsequent exposures set up an obliterative endarteritis with trophic nerve degeneration and general atrophy.

The next stage is ulceration and necrosis of the skin with tough, closely adherent sloughs that show little tendency to separate from the underlying tissue. This ulceration not infrequently degenerates into a malignant process. This latter fact is especially interesting to the homœopathic branch of the profession as the Roentgen ray is the only definite agency in the history of medicine which has undoubtedly produced cancer and has, as unquestionably, cured it.

To the other branch of the profession this fact has been a puzzle and they do not attempt to explain the seeming paradox. The rays are probably not bactericidal; and yet, in various dermatoses, due to the presence of micro-organisms they have proven curative. The results in these conditions have been explained by their action on tissue of low resistance, destroying and rendering it barren for the propagation of the bacilli. Recently it has been shown that in the treatment of this class of cutaneous affections the opsonic index is raised against the attacks of such causative micro-organisms present; such effects being due, probably, to the setting free of an autogenous, immunizing antibody. Having knowledge of their physiologic action we are better prepared to intelligently apply the rays to the treatment of the numerous pathological cutaneous affections. Why they should be beneficial in such varied diseased conditions has been explained by the fact that every morbid process has a natural

inherent tendency to right itself and that any change of environment or external impulse will facilitate this change from the abnormal to the normal condition.

A few years ago an eminent European homœopath penned a series of articles in which he endeavored to demonstrate that all departments of physical therapy depended for their curative results upon the law of similars. Several writers have dwelt upon the possible homœopathicity of the Roentgen rays in their effects on skin diseases. Possibly they furnish their quota to prove the widespread application of the law and their curative effect in such a large variety of dermatoses may be due to their being homœopathically indicated. No conservative dermatologist applies this method of treatment to all cases which present themselves. Many cutaneous affections are successfully treated by other means, much more easily applied; nor should entire dependence be placed upon this treatment. There is no doubt that in most, if not all, cutaneous diseases there is an internal or a pre-disposing cause producing metabolic changes in the skin, rendering it vulnerable to external irritants and exciting micro-organisms. And in the treatment of many skin affections much can be done by the correction of any underlying pathologic condition and rectification of any systemic derangement. The X-rays are not a cure-all but their field of application in dermatology is very extensive and X-ray therapy is the most generally useful addition to our means for the treatment of skin diseases which has ever been made. In the use of the rays the principle of treatment is always to produce a sufficient therapeutic effect without undue reaction. In their application to skin diseases, except those of a malignant type where the condition warrants some risk, the aim is to keep the effect well below the production of acute dermatitis and in the various technics, in the use of this agent, all means are attempted toward the accomplishment of this end.

The limits of this paper will not permit me to go into detail, or to mention every cutaneous disease which has been successfully treated by the X-rays, so I will report some cases of the more common dermatoses, choosing the most typical of those treated. The results in these cases will, I trust, be convincing as to their efficacy.

Epithelioma, if taken in its early stages, can almost invariably be healed by the Roentgen rays, as can also a fair proportion of ad-

vanced cases. The advantage of this treatment over older methods is its safety, convenience and painlessness and perhaps, most important, the better cosmetic effect. Some authorities claim that the results are not as permanent as when more radical means are used. However, my experience has been that they are quite as much so; and if recurrence should take place it is easily controlled by re-application. In this disease as in other malignant conditions their therapeutic action depends upon their power to destroy cells of low resistance without destruction of the normal cells.

Miss A., aged 52, gave the following history:

About twenty years ago she noticed a small wart on the forehead above the right eye which gradually increased in size and finally broke down, leaving an ulcer which spread until it was about the size of a dime. From that time she has, almost constantly, been under the care of physicians. On two different occasions she thought it was entirely well after cauterization; but each time the scar tissue broke down and the ulcer became larger than before. On examination I found an ulcer extending from the eyebrow nearly to the hair and about one inch wide. It was covered with adherent crusts and surrounded with a pearly, elevated border. At times there was severe pain of a stinging character, extending to the top of the head. Treatment was given twice a week for two months, thence once a week for about six weeks, with the result that the ulcer is replaced with a smoath, healthy cicatrix.

This case was treated over two years ago and I believe that we are justified in considering the cure permanent.

In the cure of "acne," the therapeutic results, probably, are due to more than one action; first, by causing atrophy of the cutaneous glands they diminish their functional activity and arrest their secretion; second, by destroying bacteria they inhibit the formation of pus.

Miss M., aged 25, brunette; general health fair; but is troubled with constipation and occasional sick headaches. This was the most severe case of "acne indurata and pustulosa" that I have ever seen. The pustules were deep seated and so closely aggregated that an incision in the skin at almost any point on the face or forehead would be followed by a discharge of pus. She had been in this condition, with some improvement at times, for about fifteen years;

and, during the greater part of this time, had been under treatment by various physicians. Two treatments a week were given for about three months when the skin appeared entirely free from any lesions. Of course, numerous scars are left and there is a slight atrophy of the skin; which, however, is barely noticeable. Since discontinuing the treatment there occasionally occurs a small papule which soon suppurates and heals. At no time during the treatment was there more than a slight erythema developed from the exposures. This result occurred twice, but was not severe enough to cause a discontinuance of the treatments. Improvement in the condition was very apparent after three weeks' treatment and from that time on recovery was rapid.

In eczema the indications point to the usefulness of the rays in the treatment of the chronic forms where there is an inflammatory exudate and in which stimulation is needed for the absorption of the induration.

The following case illustrates the beneficial action of the rays in this condition:

Mrs. D., age 28, general health good with the exception of an inveterate constipation. Has suffered more or less all her life; frequent outbreaks of eczema of an acute vesicular type. Treatment both internal and local had relieved her general condition, so that for two years there had been no acute attacks; but there remained on the back of the right hand, near the base of the thumb, a thickly indurated patch about the size of a silver dollar which resisted all manner of vigorous treatment. The itching was intense, and uncontrollable by any local application. Eight exposures at irregular intervals, covering about six weeks, were given with entire disappearance of the lesion. The second treatment entirely relieved the pruritus.

In treating acute eczema of the vesicular and weeping variety I have been unable to secure any beneficial results, except in the relief of the itching in some cases. In two cases it seemed to aggravate the condition, increasing the discharge and causing an intense burning in the lesions.

That the X-rays are most efficacious in the treatment of lupus vulgaris is to-day the common opinion among dermatologists. Their destructive effect upon bacteria in living tissue indicates their use-

fulness in this disease; and their application is the most brilliant which has been made in bacterial disease. But their power of destroying tissues of low resistance is also very important.

Miss L., aged 24, general health seems good, but she has a family history of tuberculosis. The eruption began about eight years ago as a small, bright red papule on the right cheek, which finally ulcerated and became covered with a crust that fell off leaving a cicatrix. Soon other lesions appeared; until, when beginning the treatment, the disease had extended to both cheeks, nose and upper lip. This entire area was covered with nodules, ulcers, crusts and scars. After five months of very irregular treatment, the exposures numbering forty-two, the case is apparently cured. About five months have elapsed since discontinuance of the treatment.

The treatment of keloid, by the X-rays, is about the only successful method of permanent cure.

Miss N., aged about 35, colored, two years previous, had received a cut over the knuckles of the right hand, which on healing had developed an elongated keloidal tumor over the knuckles of the first and second fingers. It was elevated above the surrounding skin about one-half inch and interfered with the action of the fingers. This entirely disappeared after two months of vigorous treatments given bi-weekly.

Many other cases of intractable dermatoses have yielded to radiation applied in accordance with its known physiological effect, but I think a sufficient number have been shown to indicate its great usefulness to the dermatologist.

CONCLUSIONS.

1. Radio-therapy, although not a panacea, is the most valuable asset of the dermatologist.

2. Its proper application can be made only by one possessing a thorough knowledge of its physiological action.

3. Its use should be reserved for conditions not amenable to other forms of treatment that can be more easily applied.

4. Although it has a large field of usefulness, it also has its limitations and dangers.

5. Entire dependence should not be placed upon its use, but other

indicated medical and hygienic measures should be employed in conjunction with it.

6. It should be administered with as much care as any powerful drug, and over-dosage particularly guarded against.

References: Kassabian—Electro-Therapeutic and Roentgen Rays. Pusey—The Principles and Practice of Dermatology.

DISCUSSION.

DR. RALPH BERNSTEIN: Dr. Pond's very able paper has appealed to me in many ways, especially so from the standpoint of the X-rays being considered as a cautery. That is to say, we consider it as a peculiar type of cautery, from the action of no cautery at all up to the action of a very violent type of cautery. That is to say, to be regulated by the distance of the tube from the lesion, by the type of the tube, etc.

We can readily see where such an agency in the treatment of dermatological affections could be of the greatest value to us. For instance, where stimulation is required; we can regulate it by the distance of the tube as aforesaid, and what happens? Reaction would be, of course, that from a very slight to a very intense reaction. In a very slight type we get an erytherma; and if that action be increased, we get it up to an almost entire destruction of the tissue. We can use it as a sealed cautery; that is to say, an ordinary type of cautery would cause a destruction, an open destruction of the tissues, with a violent discharge of the substance; whereas, with the X-rays, we can get a closed sort of action, in which the leucocytes carry away the debris.

As to treatment of sycosis, in which the treatment with X-ray has been a most certainly valuable agent in the deep, tumefied form. The micrococcic origin of these conditions, we know, and that they last very frequently from one to two and three years and have defied all forms of treatment; whereas, by careful manipulation with X-rays they have most certainly acted very kindly—healed up.

DR. EDWARD M. GRAMM: The position of the X-ray in dermatology is certainly an extremely important one. When we look over the history of the use of the Roentgen ray we find that the physicians as a body have made most terrific mistakes.

When it was advocated or heralded as curative, particularly in cancer, the whole profession absolutely lost its head, and every case of cancer was supposed to be cured by the X-ray. Unfortunately, almost every one who handled the X-ray endeavored to do his best through the public prints in explaining to the laity the wonderful advance that had been made in the treatment of cancer. Only one thing could come of that. Every force, whether it be medicinal, whether it be physico-therapeutic, or what not, can only be applied where it is properly indicated. No homœopath can deny that statement. Aconite has its limitations, belladonna has its limitations, and so has every other force, every other remedy, every other thing that we can use for curative purposes has its limitations; in other words, there are indications for the use of these remedial agencies.

Why do I say this? Simply because the profession at large, when it found that the X-ray is not applicable in all cases, that it is not curative in every form of disease in which it has foolishly (I may say parenthetically) been applied; because it similarly to other remedial agencies has failed, the profession has turned against it and has said the X-ray shall not be used. There are very many physicians who taboo the X-ray absolutely, and say it has no value; but those of us who are still working with the Roentgen ray know that there are very many diseases in which the patient is marvelously helped—in which conditions are marvelously cured. I say marvelously, because when you take into consideration, for instance, as I have had experience with a number of little hematomata that form upon the dorsum of the phalanges, where they grow and grow and grow—if they are removed they keep on growing; if they are cauterized they keep on growing and they keep on bleeding, and internal remedies do absolutely no good; almost the very first application of an X-ray treatment stops that bleeding, shrinks that growth; and a few treatments absolutely cure it.

There we have a blood-vessel growth that all surgeons know is hard to cure; and yet the X-ray immediately shows curative action and finally causes it to go away. The same with other forms of skin diseases. Understand, the X-ray does not cure the underlying dyscrasia, and does not cure the condition which

has brought the skin disease into existence, if the case be of systemic origin. It removes the minor manifestations absolutely by stimulating the normal absorptive ability of the locality in which the disease shows itself.

But if a large portion of the body is rayed at the same time that these local manifestations are made to disappear, it is marvelous how the oxygenating power of the blood increases. Take, for instance, the case of a cancer of the breast, where a patient comes to you almost cachectic (I say almost, because the full cachectic appearance has not shown itself); but the patient is ill and pale and somewhat wan; a very few X-rayings will bring a little flush to the cheeks, a little more vigor to the patient; so that the patient will move with more of a living, healthy action. Now that shows that there is a systemic action produced by the absorption of the X-rays which we should not neglect. But the indications are not clear-cut yet as to when the X-rays are to be applied; because they have not been used long enough; because the indications have not been carefully enough sought out by those of us who use them.

Dr. Bernstein mentions the case of sycosis—the sycosis vulgaris, the coccogenic variety, in which the X-rays are valuable. It is true that the X-rays are valuable in coccogenic sycosis, and that its lesions rapidly disappear under its use; but we have another modality, a modality which does infinitely better in this disease, which shows us that while the X-ray is possibly indicated we have a remedy which is truly indicated. In the treatment of coccogenic sycosis the most marvelous result is produced by the ultra-violet ray. Those of us who have treated cases of the sycosis vulgaris know, as Dr. Bernstein says, that this disease lasts for years; and formerly if I could cure a case with internal remedies and with local applications in connection with them in a year, I considered I was doing very well. The majority of physicians take a good deal longer than that, and do not cure them at all; and yet in five or six applications of the ultra-violet light, the true ultra-violet light; I do not mean the fake light where an incandescent light is covered with a blue bulb, or where an arc light is allowed to shine through blue glass and by that very shining through the glass the ultra-violet rays are ab-

sorbed, prevented from reaching the patient; not that kind of an ultra-violet light, but the light produced by the arcing of the electric current between terminals composed of soft iron.

I have cured patients who were utterly unable to take care of themselves, through uncleanliness and so on. The X-rays are valuable; they have specific indications for the disease in which they are to be applied; and yet unfortunately those indications have not yet been thoroughly settled because observations have not yet been carefully made.

DR. A. W. YALE: I am glad Dr. Gramm brought out the point that there are other modalities besides X-rays; and I would like to speak of the "and so forth" Dr. Bernstein mentioned; which, to me, is very important. We have our favorite manufacturers for our different drugs; and some individuals seem to think that the drugs of certain manufacturers are worthless, and praise up another manufacturer. It is just so with the use of any form of physico-therapy, particularly so with the X-ray. We have so many different points to deal with when we use the X-ray that the "and so forth" of Dr. Bernstein certainly covers a wide range. I would like to ask the doctor what modality he uses for the production of his X-ray. There is quite a dispute going on today as to which produces the better results for X-ray therapy; whether the X-ray produced by the coil, or the X-ray produced by the static machine; and so far the old men of the country seem to be of unanimous opinion that the X-ray produced by the static machine is more penetrating—that the voltage being higher, the primary current and the reducing current, the current producing the X-ray—causes the bombardment of the X-ray to be of very intense frequency and to be more penetrating and of greater germicidal action; in other words, that the higher the initial voltage in producing the X-ray, the higher the frequency of the X-ray (which, as you know, is beyond the ultra-violet of the spectrum in frequency), and the greater the velocity of these rays. I believe this has a great deal to do with the different results which different men obtain by the use of the X-ray.

I would also mention one or two facts with regard to the bactericidal action of the X-ray. This was brought out by Dr.

Titus, in a paper written some time ago, in which he carried on the following experiments, which I know are familiar to some here:

Dr. Titus took 60 fresh eggs; he separated them into three groups; 20 of them were not rayed; 40 of them were rayed, and half of the 40 were afterwards subjected to the marine searchlight. All these 60 eggs were put in an incubator. Of the 20 which were not rayed, 19 hatched and the other one showed signs of germination. Of those which were X-rayed alone, none hatched; I believe 5 showed some little sign of germination. Of those that were afterwards put under the marine searchlight, 5 hatched and all of them showed signs of germination.

Now this same experiment has been carried out with bacteria. In other words, the X-ray does not kill the germ but it does inhibit the propagation of bacteria, when properly applied. I think this fact has been thoroughly established; when the proper tube, with the proper current back of it, is used, it does inhibit the propagation of bacteria, no matter where they are, so long as the X-ray can penetrate and reach the parts.

DR. R. W. McCLELLAND: In regard to the injurious effects of this treatment on the skin as causing general breaking down of the skin surface and extensive sloughs, I see few cases of that kind. Now I would like to ask Dr. Pond if he has seen much of that method—if there is much of that sort of thing being done.

DR. E. H. POND: I have not much further to say; but in answering Dr. Yale in regard to the point of modality, of late years I have used coils altogether, a variety of coils. I have used three different makes. Previously, when I first started into X-ray work—into doing dermatology with X-ray—I used the static machine of Van Houten & Tenbroeck. My results have been better with the use of the coil than with the static machine; that is simply my personal experience.

In regard to the bad effects, I do not think that the X-ray operators are now getting the bad effects they did a few years ago. They are not running the risks, and they understand how to guard the skin from the bad effects of the ray and are obtaining the good effects. We can filter the rays through either

leather or aluminum; and by the use of the shields the operators themselves are not being burned much; there are very few reports in the last four or five years of any being injured. The injuries were received before we understood the bad effects of the rays.

DR. A. W. YALE: Have they reduced the dosage?

DR. E. H. POND: They have modified the dosage, yes. They know how to apply the dosage better. We can give now a light dosage, or a large dosage, or a medium dosage; and we can apply the dosage properly. Years ago they did not know anything about dosage. We are beginning to learn that now, the same as we do of any drug. Of course, it is not perfected yet, by a good deal.

THE INFLUENCE OF HEREDITY IN PULMONARY TUBERCULOSIS,

With Some Remarks on the Prevention of the Disease in Children of Tuberculosis Families.

G. HARLAN WELLS, M. D., PHILADELPHIA.

I fully realize that it requires some boldness to argue before a gathering of medical practitioners the opinion that heredity exercises no influence whatever in the propagation and spread of tuberculosis. The conception of tuberculosis as an hereditary disease is so deeply rooted in the minds of the profession and of the laity, and is so apparently well supported by a superficial review of the facts of personal experience, that he who attempts to question it lays himself open to adverse and often to harsh criticism. Scientific investigation, however, should not be hampered by an undue regard for the traditions of the past and I do not hesitate to state that after a thorough study of this very important question I am convinced that neither tuberculosis itself nor a predisposition to tuberculosis infection are hereditary and furthermore that the propagation of the hereditary view of this disease among the laity by the medical profession has sounded like a death-knell in the ears of many a curable patient and has had a paralyzing effect upon efforts at prophylaxis and treatment that

are at once rational and effective. I therefore ask that you will give fair and unbiased consideration to the facts that I shall present to you today, because they are of the utmost importance in the management and prevention of this destructive malady.

The hereditary conception of tuberculosis is founded on facts correctly observed, but in my opinion incorrectly interpreted. From time immemorial it has been noted that tuberculosis was very prevalent among the children of tuberculous parents. As the true cause of the disease was unknown it was naturally inferred that tuberculosis was a form of hereditary degeneration transmitted from one generation of a family to another. So fixed and definite were the laws of this hereditary transmission supposed to be that physicians did not hesitate to predict the ultimate death from the disease of apparently healthy offsprings of tuberculous parents, and the unfortunate object of these doleful prophesies confidently awaited the advent of the Destroyer with an air that was at once hopeless and pitiable. In the light of modern physiology there can be no doubt but that such a mental attitude largely contributed to impair the resisting powers of the body in such a way as to render more likely infection by the tubercle bacillus and thus aided the fulfillment of the unhappy predictions. This in itself constitutes another reason why physicians should seriously consider their attitude in this matter and if a careful study of the facts shows that heriditary transmission plays little or no part in the spread of this disease we should lose no time in impressing this idea upon the public mind.

The first conclusion is that *the direct transmission of tuberculosis from parent to child prior to birth almost never occurs.* I presume there are few physicians today who would seriously dispute this proposition. As Adami has very clearly pointed out in his able article on "Inheritance and Disease" in Osler's *Modern Medicine*, in order to have a truly hereditary transmission of tuberculosis from parent to offspring, we must have the tubercle bacillus present either in the ovum or in the spermatozoon at the time of conception. Gartner has shown by an ingenius experiment on guinea pigs that the chances that an individual sepermatozoon fertilizing an ovum should contain a tubercle bacillus are 1 in 2,250,000. Even then it is doubtful whether a spermatozoon thus infected by a

tubercle bacillus would not be so deteriorated in its vital power that fertilization would be impossible.

It is of course conceivable, and indeed we know that it has happened, that the fœtus *in utero* is infected by the father or through the maternal circulation. It must be borne in mind, however, that such an infection is a post-conceptional acquirement and is distinct from true hereditary transmission. But even were it to be admitted for the sake of argument that parental infection constituted a sort of hereditary transmission we find that it occurs so rarely as to be of no practical importance. In the medical literature of the world I am able to find only twenty authenticated cases of congenital tuberculosis recorded. Even Warthin, who is a warm advocate of the theory of placental transmission of the tubercle bacillus admits "that the actual number of observed cases of placental tuberculosis is but thirty, and the cases of congenital tuberculosis in which the intrauterine transmission is beyond doubt are even fewer." The idea advanced by some that the bacilli are present in a latent form at the birth of a child is not in accord with our present knowledge of the tubercle bacillus and has recently been conclusively disproven by the delicate tuberculin tests. For example, von Pirquet, in a series of cutaneous tuberculin tests upon 147 children under three months of age observed not a single positive reaction, and in 64 children betwen three and six months of age but three reacted. Professor Medin, of Stockholm, in a series of 400 similar tests on children less than one year of age observed a positive reaction in but 10. The conception of the hereditary transmission of tuberculosis from parent to child is therefore untenable and is worthy of no practical consideration.

My second conclusion is one that is more likely to challenge debate, namely, that *there is no hereditary transmission of a specific predisposition to infection by the tubercle bacillus to children of tuberculous parents.* In other words, I deny the inheritance of the *soil* as well as the inheritance of the *germ.* In making this statement I fully realize the frequency with which the children of tuberculous parents acquire the disease. The statistics of several thousand cases show that on the average about 50 per cent. of the children of tuberculous families become infected with the disease by the

fifteenth year. The studies of Floyd and Bowditch of Boston, developed some interesting data on this phase of the subject. They examined 679 children who lived in the home with tuberculous parents and found pulmonary consolidation in 36 per cent; more than 60 per cent. showed symptoms of tuberculosis in some form. Sachs, of Chicago, examined all the children of 77 tuberculous families, 264 in all, and found evidences of tuberculosis in 29 per cent. In 131 cases of pulmonary and meningeal tuberculosis Le Fetra found that the infected child lived in the home in close contact with tuberculous parents or friends in 40 per cent. of the cases. But, says the advocate of hereditary theory, all this goes to show that those children had an inherited tendency to the disease. No more so, I reply, than the fact that the large percentage of the children living with parents infested by the pediculosis vestimenti who acquire a similar condition can be construed as evidence of an inherited tendency to such vermin. In each case transmission of the parasites to the new host is dependent upon close and intimate association of the infected are uninfected individuals; the question of the family relationship existing between the two does not enter into the question.

There is no lack of facts to substantiate this point. The most conclusive perhaps is that while approximately 50 per cent. of children of tuberculous parentage contract the disease if they remain at home, practically none of them acquire it if taken away from their homes in early infancy. The work of Epstein at Prague, and of Heller at Nuremberg, shows that children are completely preserved from the onset of the disease by this measure. At the orphanage of St. Martin, near Tows, 127 infants taken from tuberculous families, were followed up for many years, and only three developed tuberculosis. Weill states that in the social tuberculosis work at Lyons he has removed 100 infants of tuberculous parents to a more healthy environment and not a single one has developed the disease. These results are really astonishing and there can be but one logical conclusion drawn from them, namely, that the essential factor in the acquirement of tuberculosis by children in tuberculous families is the constant and prolonged exposure to the infective organisms. One of the strong arguments of the advocates of heredity in the propagation of tuberculosis has been what they term the "habitus tuberculosus" or the tuberculous diathesis. They

pretend to recognize the evidences of a disposition in the physical appearance of children of tuberculous parents. Prominent among the so-called stigmata of the tuberculous predisposition are cited pallor, malnutrition, enlarged lymphatic glands, diseased states of the bones, etc. We must recognize, however, that these conditions are by no means confined to children of tuberculous parents, but are found also in children born of healthy parents, who have been exposed to contamination by the tubercle bacillus. In fact, it is conclusively proven by clinical and post-mortem investigation that the pallor, the malnutrition, the enlarged lymphatic glands, etc., are evidence, not of a tendency to tuberculosis, but to the actual presence of the disease itself. In other words, these children have not inherited from their parents any peculiar physical predisposition, but have developed the conditions above referred to as a result of the acquirement of the disease itself by post-natal contagion.

There is another well authenticated fact that the hereditary theory of tuberculosis utterly fails to explain, namely, the rapid and fatal spread of tuberculosis among nations new to the disease, especially the Indians and Negroes. Prior to the advent of the white man the disease was practically unknown among both of these races. An inherited predisposition could not therefore exist, and, in fact, we would have a right, if this theory were there, to expect that a relative immunity would be present. Experience, however, shows quite the reverse to have been the case. Many tribes of Indians have been practically exterminated by it. Dr. Thomas Williams wrote of the Dacotas, that of those over ten years of age who died of disease, one-half died of consumption. The death rate among the negroes in the United States is three times as great as the whites, while in parts of Africa, in the Bahamas at Gibraltar and other places they have succumbed to it rapidly. A noted writer on this subject states that "it has decimated the natives of probably every island that has been colonized by England during the last few hundred years." Certain writers have endeavored to account for the destructive influence of tuberculosis among these races by ascribing it to their unhygienic methods of living. These unquestionably have had their effect, but they cannot account for the fact that the death rate among the Indians and Negroes should be from four to five times as great as that of the Russian Jews of New York city, living in

the most overcrowded portion of the globe, in the midst of the direst poverty and the most unsatisfactory sanitary conditions. And yet we know that tuberculosis has not existed among the Jewish race for forty centuries. Their comparative immunity strongly suggests the gradual development of a racial, (and this necessitates the supposition of an inherited individual,) immunity among nations in which the disease has been prevalent for many generations.

From the data just presented I feel fully warranted in stating that the idea of a hereditary predisposition to tuberculosis is a myth, born in the days of medical ignorance and kept alive today by tradition; that the so-called tuberculous diathesis as evidenced by glandular, lympathic and nutritional disturbances is in reality a form of the disease itself, and finally that the prevalence of tuberculosis in the offsprings of tuberculous parents is fully and satisfactorily explained by post-natal infection at a susceptible age through constant and intimate association with infected individuals. Practically speaking, it is environment and not heredity that is responsible for the prevalence of the White Plague.

Let us now consider briefly how the knowledge that the important factor in the propagation of tuberculosis is not heredity, but acquired post-natal contagion is to be applied in the practical management of this disease. *Should it be assumed that because* the offsprings of tuberculous parents neither inherit the disease nor a predisposition to it that, therefore, they should be encouraged to marry to and rear children.

Nothing could be more fallacious, and I wish to state positively that for a child to be born of a parent actively tuberculous is contrary to the welfare of the parent, of the child and of the community. The bearing of children is not only harmful, but in a large percentage of cases even fatal to a tuberculous woman. The child itself, unless the mother is in a very advanced stage of the disease at the time of its birth, is usually sound and healthy, but if we wish to assure ourselves that it will remain so it must be removed at once from the tuberculous family and reared among uninfected people. Such a measure as this is not only opposed by the parents, but deprives the infant of the maternal care and solicitude which if not necessary to its proper development is certainly desirable. The

economic cost of such a prophylactic measure also is such that it is entirely impractical among the great mass of people.

As we have previously indicated in this paper, approximately 50 per cent. of the children reared in tuberculous families become infected with the disease *by the* fifteenth year. The largest percentage of infections occur after the first year. There is only one positive method of prevention and that is the immediate removal of the child from the infected family and placing it in a healthy environment. When this is impossible there are two principles that we must keep in mind in instituting prophylactic measures, first, *the prevention of infection by direct contagion through association with the tuberculous person or persons,* and, secondly, *the maintainence of the bodily health of the child at the highest possible point.* In carrying out the first of these principles, namely, the prevention of contagion, the most rigid precautions must be observed. At no age is the human organism more susceptible to infection by the tubercle bacillus than between the ages of one and five years, and the opportunities for infection during this period are most numerous. A tuberculous mother should never be allowed to nurse the child at the breast. *Artificial* feeding on milk free from the tubercle bacillus should be advised. A tuberculous parent should not be allowed to kiss the child on the lips and should exercise great care not to cough in the child's face. The child should sleep in a separate room, which should be thoroughly ventilated. Crawling around on the floor on a dusty carpet and putting in the mouth objects that are lying around in the room occupied by a tuberculous individual should be prevented as far as possible.

It is readily understood, however, when we come to the practical application of these measures, that in the average family they can only be partially carried out and the opportunities for infection are so numerous and so constantly present that it is small wonder that so many children acquire the infection.

All children of tuberculous parentage should be closely watched and should they develop suspicious signs of infection they should be carefully tested by tuberculin and treated at once if the reaction is positive.

The maintenance of the bodily health at the highest possible point requires the institution of a hygienic method of living, with minute

attention to detail and the intelligent co-operation of the parents. Where these conditions can be met the results are highly satisfactory and will fully repay the family physician for the efforts in this direction.

After all, the solution of the tuberculosis problem lies in the care of children, for the investigations of recent years have shown that the vast majority of cases of tuberculosis among adults can be traced to the stirring up of a latent infection acquired during childhood.

DISCUSSION.

DR. M. M. FLEAGLE: I have the greatest respect of Dr. Wells' opinion. I believe that what he says, he has only said after due study and consideration of the question involved; but when you strike at heredity and the lack of heredity in anything, you are striking at one of the fundamental principles of Hahnemann's promulgation, to start with. It can not be denied but that there is such a thing as heredity. We can inherit certain characteristics from our parents; we do inherit them. I do not say that we inherit the tubercle bacillus directly; that is the first statement of Dr. Wells' paper—that we do not inherit the tubercle bacillus as such; but when he makes the statement that there is not even the inheritance of the predisposition, I believe that there is ground for an honest and wide difference of opinion. To be sure, that will raise the same old question, does the bacillus cause the disease, or is it a product of the disease? At any rate, he speaks of tuberculosis as being an infection. To be an infection, granting that it is an infection—the tubercle bacillus can not thrive unless it has proper environment, any more than wheat, or corn, or anything else in nature can thrive without proper soil. In regard to infection, I believe there is more room for difference of opinion—that the late Dr. Snader, when I was a student, taught the infectious nature of tuberculosis. In a paper read by him at Altoona, he made this statement: "The more I look into the causes of tuberculosis the more fully am I convinced that there are many cases of tuberculosis in which the symptoms are present and no bacilli demonstrable."

If that is the case, then what is the original cause; what is the primary cause of the trouble? Another statement made by the

essayist says that unless children are removed from tubercular environment, 50 per cent. of them will be subjected to the disease by infection. The question I want to ask is, what becomes of the other 50 per cent; why are they not infected? Fair question—if 50 per cent. become subjects of tuberculosis, there are 50 per cent. which do not; what becomes of them? I thank you.

DR. R. V. WHITE: The question of heredity and the question of environment is a thing that seems to be not only interesting to general medicine, but also to literature and various other things. The fact that fifty years ago somebody said that certain things have to be hereditary, is no sign that at the present time we should think that they are. For a long time before hearing this paper from Dr. Wells (which I have appreciated very keenly,) I have had a very similar thought, and have often been criticised for the thought, that I have taken that view of tuberculosis that it was not hereditary *per se*. Why, then, do you develop tuberculosis? Tuberculosis unquestionably is an infectious disease. Perfectly healthy people do develop it. Now, then, if 50 per cent. of the children develop tuberculosis of tubercular parents and the other 50 per cent. escape it, the Doctor asks what becomes of that 50 per cent. The mere fact that 50 per cent. of them will develop tuberculosis and 50 per cent. of them escape, certainly proves to my mind most conclusively that they have no hereditary predisposition toward the disease, if that fact is true (I am not asking the question of what becomes of the other 50 per cent.—I want the Doctor to answer that); but it certainly proves to my mind that if that fact is correct, that 50 per cent. who are born of tubercular parentage develop the disease and the other 50 per cent. will not develop it—it certainly proves most conclusively to my mind that they do not even inherit a predisposition toward that diseased condition.

I quite agree with him in the removal of the children into a healthy environment. I believe that we can not only correct certain inherited tendencies physically, but also morally. Environment is much stronger than heredity, as he says; wherein I agree with him.

DR. G. M. GOLDEN: Heredity in the direct transmission of tuberculosis is open to considerable discussion. As regards the direct transmission of tuberculosis, it is a thought which I have never been able to accept; and those cases which do occur, are prob-

ably, as you might say, accidents. They do not occur often enough to be even coincidental: but I cannot agree with the statement that the doctor makes—that no hereditary tendencies to tuberculosis are passed down from generation to generation. I think you will acknowledge that when fecundation has taken place while a certain subject has tuberculosis the offspring will more than likely not be in perfectly normal condition for the spermatozoa of such a subject have not the vitality of those of a normal individual, and if you build something out of material which is not good, it certainly cannot be made good afterwards. If we put bad lumber or bricks into a building, we cannot change it by other methods—it cannot be done. I rather feel that there is a hereditary tendency in tubercular conditions.

The doctor draws a comparison between the tubercle bacilli and pediculosis, which is hardly a fair juxtaposition, as one of them belongs to the protozoa. The doctor states that after these children are removed from their environment, that should be sufficient *per se*; but he advises the treatment of such subjects as though they were tubercular, and if such cases did not show any hereditary tendency after their removal, I would rather feel inclined to think that the after treatment would not be necessary; nevertheless, I most heartily agree with him in that. Environment is an important factor in developing the disease: for instance, in a case in which the patient was simply nursing another there was no history of tuberculosis in that family; but after a year of nursing a subject of tuberculosis, this patient showed a well-marked consolidation at the right apex and was the subject of environment. I most heartily accord with him in many particulars, but as regards there not being any hereditary tendencies I cannot agree with him.

DR. G. H. WELLS: I feel that I have gotten off very mildly. I expected to be ripped out rather worse than I was. As regards the 50 per cent. that do not develop tuberculosis, it seems to me that whether you consider the disease hereditary, or due to environment, we still have to explain the 50 per cent. If the doctor assumed that there is a hereditary predisposition, then why is it not hereditary in all, why only hereditary in half the children of the parents?

That, however, is not a serious question. There are people who

will be exposed—a hundred people exposed, for instance, to a smallpox epidemic; some will be infected and some not. That is true of all infectious diseases. Given a certain number exposed, some people, on account of the condition of their blood, on account of the condition of an immunity which exists at that time, will not become infected. A person may be immune today, and not immune six months from now. A person may acquire smallpox now—or may not acquire it now, and yet will acquire it later. Immunity is not a positive state, it is a state which changes from day to day; and it is not a fixed and definite condition, except in certain diseases, such as one attack of smallpox confers practically a perpetual immunity against another attack; but that is not true of tuberculosis. A man in absolute vigorous health is practically immune to tuberculosis, and I conceive that the doctor's idea is that a healthy patient protects against the disease. That is true; but very few of us are in a maximum state of health all the time. We may live in the home of a tuberculous individual for a week or six months; and if we were in a state of maximum health, we might possibly—I might almost say probably—escape infection; but let us be worn down by loss of sleep, or something else which temporarily lowers our condition—we may then acquire infection. This may explain the fact that some children, although placed in the environment, do not acquire the disease because their state of health happens to be maintained in better condition.

Dr. Golden thinks that I am not altogether sure that the predisposition is not hereditary because I recommend that children who are removed from tuberculous families should be placed under good hygienic conditions. Experience shows that in children who are not under good hygienic conditions, 30 per cent. of them acquire tuberculosis. Dr. Floyd, in Boston, made a very extended investigation on the poor children in that city, examining about 352 children of non-tuberculous families, but families who lived in poverty; 30 per cent. of them were infected with the disease; therefore it is not sufficient to get them away from tuberculous individuals, but we must keep them in good health, whether they come of tuberculous families or not.

Why should a child having no predisposition toward the disease, acquire the disease, if he is not of a tuberculous family? There are

two ways of answering this question. In the first place, many authorities believe that the infection is conveyed through milk; leaving that out, there are few homes in which tuberculous individuals knowingly or unknowingly do not enter; and then it is as easy to get the infection from an aunt, or an uncle, or the milkman, or a nurse, or whoever it may be, as from the family; in fact, in many of these cases that Dr. Floyd studied, the infection came through persons not members of the family who were simply visitors or boarders or what not in the house: so that I still feel that it is important, not only to protect the children from contagion, but that all children, whether of tuberculous parents or not, should be kept under as good hygienic condition as possible, if we wish to avoid the disease.

INSOMNIA.

ARTHUR W. YALE, M. D., PHILADELPHIA.

It has been the experience of the average practitioner that the discouraging, not to say demoralizing, condition known as insomnia, does not readily prove amenable to treatment, and the physician has often been at his wits end to afford the relief which the worn out patient demands.

A medical man after an unusually fatiguing day's work had fallen asleep when he was roused by the violent ringing of the telephone. "Is that you, doctor?" asked an anxious voice. "This is Mrs. X. I couldn't sleep so I thought I would call you up and consult you about it." "Hold the wire," replied the son of Esculapius, patiently, "and I'll sing you a lullaby."

But even lullabies fail to woo "Nature's sweet nurse" back to her duties, and counting one thousand and watching imaginary sheep jumping merrily over an imaginary fence frequently fail of their purpose. The problem cannot be disposed of as did the old Scotchman settle it who assured his sleepless wife: "If you have a good conscience you can sleep. 'Tis naught but an evil conscience keeps folks awake!"

Insomnia is a condition which merits prompt and serious attention. It may be the habit of a restless, worrying mind, which cannot compose itself to rest. It may result from excessive

brain work on the part of a student who fails to realize that midnight oil is a most expensive fuel. It may be the outcome of grief, anxiety, or bodily ailment. But whatever its cause, insomnia is capable of undermining the strongest constitution and paving the way for serious mental disorders. Before discussing the treatment of insomnia it may be well to briefly state a few fundamental facts regarding sleep.

The body is continually undergoing changes producing what the mechanical world would term "wear and tear," which result in exhaustion. There must, therefore, be a compensatory process of rebuilding the wasted tissues. Consequently we find periods of reparation when the cerebro-spinal system gives way, as it were, to the sympathetic system and the latter holds sway. During these periods a process of assimiliation takes place, when the food, prepared by the digestive organs, is used for the reparation of the body. These periods of reparation are accompanied by a lessening of the amount of blood to the brain—for since the cerebro-spinal system is less active, a large blood supply is not necessary, the muscles become inactive, unconsciousness supervenes, and we sleep.

There has been a tendency to confuse cause with result, or in homely phrase "to put the cart before the horse." To quote old Dr. Raub: "It is erroneous, therefore, to say that the state of comparative repose allows the balance to be restored, since, in fact, this restitution, or more definitely expressed, the assimilating process, does not allow the accustomed action of the mind, brain and other organs. Unconsciousness is a necessary concomitant of sleep, not its essential nature."

Whatever interferes with the process of assimilation will cause insomnia. Fevers number sleeplessness with their symptoms, certain beverages, such as tea or coffee, have been proven to retard the work of reparation, and, as has been already suggested, various mental states are responsible for this condition.

The writer received considerable light on the subject from an experiment conducted at Clark University, Worcester. A young dog was tied behind a trolly car and for about an hour was forced to run through the streets of the city. The car stopped in front of the University buildings, the dog was taken to the laboratory,

where it immediately fell into a deep sleep. After allowing sufficient time for it to become absolutely unconscious, the skull was quickly cut open with a sharp cleaver (the dog being young, the immature state of the skull permitted this to be easily done). A section of the brain was at once placed on the freezing plate of the microtome, and section after section made. Upon examination there was found to be a space between the neurons and their terminal cells, and this was true of each section. In other words, the neurons had retracted, and the mysterious connection between the nerves of the cerebro-spinal system and the terminal centers had been interrupted by a "break in the line."

It has been truly said that there is nothing new under the sun, and while the influence of mind over matter is being emphasized today, yet this same doctrine was taught by Esculapius. If we grant that the cerebellum contains the "think" cells, and that it can control the cerebrum, then it becomes evident that it is a simple matter for an individual of strong mentality to induce sleep by the old Hindoo method. This method, which was common among the high caste, consisted in the individual assuming a comfortable reclining posture. He then by mental effort commanded the toes to fall asleep, or in other words the neurons were retracted from the nerve cells governing the motor centres of the toes. This process was gradually extended up the legs, and beginning with the fingers, thence up the arms, until at last the entire body was asleep, with the mind still awake. In this state, these Orientals claim that they are capable of their best thought. With physicians, however, this process is not employed for the purpose of encouraging contemplative meditation, but for inducing sleep, by first placing the body in a somnolent state, thus enabling the mind to enjoy rest. It will hence be seen that sleep may be defined as a complete relaxation of all the functions goverened by the cerebro-spinal system.

The prognosis for insomnia, as given by the leading authorities, is unfavorable. The administration of hypnotics is to be condemned, since by this means a pernicious drug habit is apt to become fastened upon the patient. With some cases a proper diet, rest and exercise will induce the sleep habit.

But there are also patients suffering from nervous breakdown,

neurasthenia, and complete loss of mental control (nervous prostration) who are unable to sleep—a most ominous symptom of further trouble. These patients appeal to the physician for relief. He cannot conscientiously prescribe drugs, he cannot sing lullabies over the telephone in the night watches, nor can he assure them that it is merely a troublesome conscience. The latter diagnosis might lose him the case.

It is for this class of patients that physico-therapy offers the long-sought relief, when the physician is well nigh as dseperate as the patient. This treatment is, of course, best administered in a sanitarium, where the patient is compelled to live in the proper environment, but it may be carried out at home, while in mild cases, good results have followed office treatments administered late in the evening. The patient should be instructed to remove all clothing, a kimona or loose robe being provided. This should be placed on backward, so that it will open in the back instead of front. The patient should now lie down face downward with arms and legs in a comfortable position, the spine bared the entire length. The actino-therapeutic lamp is then slowly swung up and down the entire length of the spine, care being taken that the light is not placed too near, as the object of the treatment is not to induce marked absorption of the heat ray, and dissipation by perspiration, but to produce relaxation by means of the combined light ray. It is also important that the light be swung slowly and that it be hung sufficiently high above the patient that the arc through which the light travels shall correspond with the curve of the back, so that one portion does not receive more heat than another. Simple as this technique may sound, these details are exceedingly important, for the best results cannot be obtained unless they are closely followed.

Having experimented with other modalities, the writer is firmly convinced that the best results are obtained by this method, and in the treatment of insomnia he now employs it exclusively. It is quite probable that at the beginning of the treatment the muscles of the back and extremities will be tense, and there may be marked twitching, as the patient endeavors to lie quiet and heed the repeated instruction to relax. It is advisable to repeat during the treament the words, "Relax! Relax! Relax!"

as it will induce mental effort, while the light is forcing the relaxation of the tissues, through the simple relaxing waves of light and heat energy passing slowly into the nerve fibres, as they emerge through the interspinous processes. The relaxing effect is distinctly seen, for any twitching ceases, the muscular tension disappears, and at the expiration of from ten to thirty minutets the patient is quietly resting with closed eyes, and tissues in a state of repose, such as may not have occurred for months or even years. It is hardly necessary to add that this treatment should be given in a quiet room, and aside from the instruction to relax, no conversation should take place.

For insomnia produced by marked functional disorders governed by the nerves of the cerebro-spinal system, the following treatment has proved efficacious and has been recommended by Dr. Frederic De Kraft, of New York, in a recent article on the "Static Brush Discharge." For this treatment the patient should undress as before, being especially particular to remove shoes and stockings. He should sit upon a stool, or a chair sideways, with the bare feet resting on the metallic plate connected with the negative pole of the static machine and on the insulated platform. The brush discharge should then be applied slowly over the bare skin of the back, with the result, to quote Dr. De Kraft: "Of a dilation of the superficial capillaries. When used in the form of the blue pencil flame a distinct inclination to drowsiness is felt, to be followed in an hour or two by positive irresistibility to sleep. Cases of nervous unrest, general trembling, sleeplessness due to overindulgence in alcoholic stimulants, have had the blue pencil discharge applied over the back and abdomen, until a thorough reddening of the skin made its appearance, with the result of healthful, refreshing sleep, return of natural appetite for food, and allaying of craving for drink."

Physico-therapy has won laurels in many fields but none are better deserved than those attained in the treatment of nervous affections. Insomnia has been in many cases an apparently insurmountable obstacle in the road to recovery, or, at the risk of mixing metaphors, the writer should say that in many instances it has been a milestone on the road to the madhouse. Grateful indeed will be the patient who is freed from the curse of insomnia and can once more woo the drowsy god and enjoy "sleep that knits up the ravelled sleeve of care."

REPORT OF THE SECTION OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

Complications of Cataract Extraction, by W. W. Speakman, M. D.

Hypertrophic Rhinitis, by G. W. Mackenzie, M. D.

COMPLICATIONS OF CATARACT EXTRACTION.

W. W. SPEAKMAN, M. D., PHILADELPHIA.

The successful extraction of the crystalline lens is an accomplishment in which each step of the operation depends largely upon the skill and completeness with which the preceding procedure has been performed.

Under normal conditions these steps follow each other in classical routine, but where, owing either to an eyeball having undergone structural change, previous to operation, or where some detail in technique has failed, the operator finds himself facing a complication which calls for the greatest exercise of both judgment and skill. As I have intimated, these complications may exist either in the eyeball previous to operation, in which case they may, of course, be anticipated and planned for, or they may occur during any one of the steps of operation, the result either of faulty technique, some untoward action of the patient, or to a condition that could not previously be determined. It follows, therefore, that the eye to be operated upon should first be subjected to the most careful and critical examination, not only as to the size and ripeness of the lens, a knowledge of the lens capsule, but also as to the possible mobility of the lens itself.

An eye may also have been the seat of some previous injury or inflammation, materially altering its structures or forming adhesions, thereby necessitating some especial precaution or procedure.

The prominence of the brow, the recession of the eye in its orbit, smallness of the eye itself or a narrow palpebral fissure may alike offer complications that may seriously handicap our efforts. The ocular

examination should be conducted under a mydriatic so that we may by ophthalmoscopic and focal examination determine the opacity of the lens at its periphery and form also a definite conception of the size of the lens itself and the section thus required for its delivery.

The capsule is to be carefully inspected for thickening and for chalky deposits in its substance, for few complications are more annoying than an insufficient section and a tough and unyielding capsule where we least expect one.

Of still more importance, however, is the presence of a luxated or partially luxated lens or a lens while not actually displaced is yet movable.

By employing a mydriatic we likewise are able to determine the presence or absence of synechia, and the readiness with which the iris responds to the atropine. It is also important where possible for us to determine what has been the patient's previous refraction, remembering that our chances of having a fluid vitreous are greater where myopia especially of a high degree exists.

The depth or shallowness of the anterior chamber may also guide us in the selection of a knife and give us also a relative knowledge of the antero posterior dimensions of the lens.

Nor should we neglect to determine the character of the tension, the relative thickness of the cornea and the friability of the conjunction.

In short any condition that departs from what would be an otherwise favorable typical eye for operation should be noted and discounted before the case actually comes before us for operation, as the slightest variation from our prearranged plan may necessitate the use of additional and special instruments. It is the safe rule always to include every instrument that may possibly be needed. The complications at the time of operation may begin by the snapping of the point of the knife in the boiling pan or at the point of primary puncture. This by no means a frequent occurrence should be borne in mind, and the failure of the knife to promptly and smoothly penetrate the corneal tissue should remind us of the possibility and at least three perfect knives should be at hand for each operation. The introduction of the knife inverted likewise is of rare occurrence and while it can only happen through

carelessness it has nevertheless occurred to some of our best operators.

Its prompt removal and postponement of the operation is the only safe, though humiliating, alternative of the operator, as it would be unwise to again traverse the anterior chamber now collapsed with the iris and lens in juxtaposition with the cornea. Splitting the lamella off the cornea and failure to enter at once the anterior chamber is usually the fault of the timid beginner who fears lest the point of his knife may go too deep and thereby wound the iris.

In the same manner the tyro may in traversing the anterior chamber catch up the iris on the point of the knife or catch it upon the inner layer of the cornea and either such misfortune may lead to further embarrassment, for in his efforts to disentangle the tissue by withdrawal of the knife aqueous may be lost and the iris and lens advance to the embarrassment of the operator by allowing the iris to fall in front of the ascending knife.

If the primary puncture or entrance of the knife was too high the operator should seek compensation by making his counter puncture lower and thus secure a sufficient opening. Failure to do this results in too small an opening for the delivery of the lens, one of the most serious and annoying of all complications resulting as it does in obstructing the ready and prompt delivery of the lens. Once, however, such difficulty has been recognized we should promptly enlarge our incision with the scissors, great care being used in introducing the blade in the anterior chamber lest we injure or tear the suspensory ligament or iris now dangerously near the line of our section. We should be sure also that the scissors are sharp and that they do not bruise or crush the cornea, thereby interfering with nutrition.

The introduction of the capsulotome and the opening of the lens capsule is one of the most delicate steps in the operation, and as undue pressure may unduly depress the lens or scoring too near the periphery may pass through the suspensory ligament into the vitreous. One fault lies in the fact that the point and cutting edge of the capsulotome is too often dull. They should be sharp enough to pass through the testing drum almost as smoothly and cut as sharply as the von Graefe. Too often I believe it only tears insufficiently the lens capsule, thereby necessitating undue pressure to de-

liver the lens which is compelled to force itself through the only partially opened membrane. All this increases the danger of rupture of the suspensory ligament. Indeed I believe too small a section and insufficient opening of the capsule the principal reasons for the presentation and loss of vitreous.

Loss of vitreous is a serious though by no means necessary disastrous complication. Should it occur prior to the delivery of the lens we should instantly remove the speculam and depend upon an assistant to separate the lids, thus lessening to a degree the patient's power to squeeze the lids and hasten the expulsion of the vitreous. An effort should then be made to deliver the lens by means of the wire loop or sharp hook. Should the vitreous follow or accompany the lens the speculum should likewise be removed and the lids immediately closed and the customary dessing applied. My efforts at replacing vitreous, though few, have been unsuccessful, and I believe nature is better adapted to the problem than we. Occasionally, where the cornea is extremely thin, it remains inverted immediately after extraction, causing the wound's edges to gap.

If, after waiting a reasonable time, it fails to assume its natrual shape, we should carefully lift the upper lid by the cilia clear of the lower flap and trust to the aqueous filling out the anterior chamber, favored somewhat by the lids forming a sort of natural mould and splint for the ball. Prolapse of the iris, where preliminary iridectomy has been performed, rarely occurs, and should we be unable to replace it the protruding part may be safely excised.

Should the section be made or finished in the sclera rather than the cornea hemorrhage may be a troublesome annoyance.

Mere blood in the anterior chamber, however, is a matter of no especial consequence, as it readily absorbs in from twenty-four to forty-eight hours.

Deep hemorrhage from the retinal vessels is occasionally encountered in very old or atheromatous individuals and generally calls for prompt enncleation.

Should, however, in spite of a generous section and a correct management of the capsule, we encounter difficulties in completing the delivery, owing, perhaps, to a large nucleus, we may often assist by means of an inverted capsulotome carefully introduced below the

now presenting lens, and by upward traction, coincident with pressure through the lower equator of the cornea accomplish its accouchement.

While we have been considering the difficulty of delivering an abnormally large lens, it is not to be forgotten that a very small nucleus may also present annoying difficulty. This nucelus may be so small as to slip from one side to the other of spatula and refuse to engage in the wound aperture.

Should it resist all efforts at removal try pressure and manipulation through the cornea. We may attempt delivery by the small wire loop or a suitable Daviel spoon, but it would be wiser to have it remain than to raise undue instrumentation with the danger of loss of vitreous. Its presence will do no great harm and absorption would probably ensue in a few weeks.

Another danger consequent on insufficient opening of the capsule lies in the attempt to re-introduce the capsulotome and complete the opening of the capsule after ineffectual effort has been made at delivery during this effort the upper part of the lens has advanced and its sharp edge is probably presenting at the tip of the wound with the suspensory ligament on the stretch. At this particular stage there is great danger of opening the suspensory ligament and penetrating the vitreous chamber. The retention of considerable masses of cortex after the removal of the lens nucleus may often be removed by gently stroking the cornea upward with the daviel spoon or by using the lower lid under the left thumb, we may carefully manipulate the mass upward while slightly depressing the upper flap with the index finger of the right hand. Gentle irrigation with a saline solution may also be used in these efforts looking to the removal of remaining cortex should not be neglected even where the pupil appears perfectly clear and black, for it sometimes happens that the remaining cortex is clear and transparent and the black pupil and good sight present at the time of operation may be followed by pupilary haziness and obscured vision later on.

In conclusion let me urge upon the operator of limited experience to coach his patient thoroughly before operation, explaining, if the subject be intelligent, exactly what is expected of him, particularly cautioning him against squeezing the lids, or looking upward in the

direction of the operator's voice, unless told to do so, to keep the hands at his sides and not to speak unless spoken to.

Neither should he alarm or speak sharply or harshly to the patient, as he thereby tends to startle him and cause him to do exactly what is not desired.

In fact the careful management of the patient is almost as much of an art as the extraction of the lens itself, and secondly I would caution him against meddlesome instrumentation and to err always on the side of caution, and finally not to attempt cataract extraction at all until he has performed the minor eye operations, and has had the opportunity of long apprenticeship to an accredited operator.

It is in no sense a textbook operation, the judgment, dexterity and finesse of the expert hand is only gained by patient, painstaking attention to details and the moral right to operate follows and is not coincident with the legal right.

DISCUSSION.

DR. H. F. SCHANTZ: There is one remark that struck me; that is this, "Hold your patient." I believe that is one of the very important details of cataract extraction. One additional point that he did not make was, exclude relatives from the operating room when you do a cataract extraction.

Some year or more ago it was my pleasure to see an expert operator begin a cataract extraction on a patient who had not been coached; and he had a very unfortunate experience of displacing that lens. He had an old Irishwoman who had not been coached—it was very apparent that she had not been; and he had that unfortunate accident happen to him. He succeeded in removing the lens by means of the spoon; but the result was a failure; he lost a great deal of vitreous, and the eye was practically destroyed for good vision.

DR. H. S. WEAVER: I had the misfortune one time of doing a cataract operation in which I had not coached my patient at all. She did not seem particularly nervous; and I thought I would not need to go through any especial care in that line. I cleansed up the eye very carefully and introduced the speculum and my Graefe knife, and only had it half way through the eye ball, had only made the counterpuncture when the woman commenced suddenly to wink

her eye, and kept up her winking until she forced the speculum out between the lids. I talked to her as kindly as I could; I regained her confidence as quickly as I could, and had the assistant, with his thumbs, grasp the upper lid and with the thumb of the other hand grasp the lower lid and so completed my operation. Fortunately I had no serious results occur; the lens came out very nicely; and we had a very nice result; but I certainly would be very sorry for any one who gets into that predicament. There are a few seconds of absolute torture and you sweat drops of blood.

DR. R. W. McCLELLAND: I can not refrain from telling a little experience that I saw long before I began to practice medicine. I had an older brother who had been at it for some time, and at that time the general practitioner performed these operations for cataract; and I was supposed to be assisting at an operation and he had his man lying on an old-fashioned sofa; and he stood at the head of the sofa and the man was lying down, and so he started to work on the cataract. Just as he started the incision the man began slipping away from him, until finally the Doctor had to get up on the sofa on his knees; and then follow him up; and the man kept slipping along until finally "J. H." was lying full length on the sofa, himself, and the man was lying full length on the floor.

DR. E. W. BRICKLEY: I heartily agree with my fellow members of the ophthalmic profession that Dr. Speakman has most thoroughly covered the ground.

Speaking of the complications that are liable to arise, he has cited a number of which I suppose one or more have occurred in the experience of every one who has tackled this most delicate little operation of cataract extraction. I had a case in my own personal experience which amazed me at the ultimate result. Though I had carefully cautioned the patient not to look up or down unless spoken to, I had completed the linenal incision and gotten my iris forceps in position, when, without a bit of warning the eye was violently twisted to the side. I think there was a most beautiful rent made in that iris that extended possibly about halfway of its circumference. The anterior chamber at once filled with blood and I had to complete the delivery of the lens and the opening of the capsule in absolute darkness—had to do it by the sense

of touch. The lens was delivered; and the family in this instance were in the room. Of course, they did not know but that the hemorrhage was what was to be expected, and I did not enlighten them at the time; but, marvelous to say, that case cleared up so that it was able to read diamond type with appropriate correction afterward, which I put on possibly about two months afterward. That case I only instance to show what mutilation sometimes the human eye will stand in an operation.

It has been my misfortune at times to have lost vitreous operating in those cases where there is a high degree of myopia; you always rather expect it in those cases, and it is rather rare where you have a luxated lens that you are able to extract with a Daviel spoon without the loss of vitreous; and it has always been my equal fortune that I have never experienced the total loss of vitreous. I think the most difficult portion of the cataract extraction is the opening of the capsule. That requires more delicacy of touch than almost any other stage of it. You can positively see where you are going to put your Graefian knife; and provided you have cleared the sclerotic sufficiently, hemorrhage will not bother you. Some irises bleed profusely. Sometimes I take the speculum out and allow the lids to close gently and use a pledget of cotton saturated with boric acid until the bleeding has ceased. Very often you will strike an unusually tough one; and if your cystotome is not in absolutely good working order, time and again I think I have shared the general feeling of the average operator with the cold chills running down his back, when, on using the cystotome, he finds his lens not coming out, but remaining stationary.

I think that paper of Dr. Speakman's is a gem. I don't mean to flatter him; but it has explained and covered the ground better than any description that I have seen in any textbook, and I have a few; and I have listened to it with the greatest of pleasure, and think I have gotten much profit out of it.

DR. G. W. MACKENZIE: It may not have been Dr. Speakman's intention to speak of complications after cataract operation; but I would like him, in his final remarks, to answer one question: Have you met, in your wide experience (you have had a wide experience at Hahnemann,) have you met many post-operative hemorrhages, so-called expulsive hemorrhages, sub-choroidal; and

what precautions you took against it? This is, do you have the patient wear a mask, or have the arms tied, or give any remedies internally, as the bromides? Perhaps it was not your intention to touch on that.

DR. W. W. SPEAKMAN: I do not want to trespass on the time of the many papers that are to follow. I did not purposely go into post-operative treatment, because it covers such a very wide field; and in regard to hemorrhage following operation from the deeper structures or the retinal artery, I remember distinctly two cases, both occurring in the same individual—a woman over eighty years of age; in which the case was operated, the lens successfully delivered and the patient returned to the ward with the greatest possible care. That is one thing that we are most particular about—that the orderlies take those cases from the operating room with absolutely no jar to the patient, who is instructed to make no muscular effort whatever. Two orderlies lift them with great care on a bed and they are instructed absolutely not to wait on themselves, nor to make any attempt for it—to depend entirely on the nurse for every thing. In one of these cases I had not been out of the hospital fifteen or twenty minutes when the resident told me that the dressings were saturated with blood. The case was immediately brought back; I found a blood clot occupying the eye-ball; and vitreous had been forced out. We etherized at once and removed the eye-ball. I then communicated with her family in regard to the second eye. The second eye evidently had undergone, at some previous period, prolonged inflammation. There had been an iritis and probably some cyclitis in the second eye. She had a hemorrhage about twelve hours after the extraction. Sharp, sudden pain was experienced in the eye; and in a few minutes the blood saturated the dressing.

Those two are about the only cases that I recall in my own experience. I attended the after treatment, or at least assisted Dr. Thomas, in an extraction where we had a retinal hemorrhage directly at the time of the operation. Of course, there is more danger in those cases where glaucoma has existed, or we have a cataract existing coincident with the glaucoma, the tension produces the hemorrhage.

Now, in regard to the care and after treatment: it is my custom

either to tie the hands of the patient by a bandage to the foot of the bed, leaving them limited motion so that they can not get the hand up to the face; or, have a night nurse, who sits by the case all night and does not take her eye from the case; or, to put on either a papier-mache mask, well padded to protect from making any pressure on the eye; or we have used lightly perforated German silver—or, rather, aluminum—discs, which can be molded so that they take all the pressure from the ball.

Ordinarily we take no precaution against post-operative hemorrhages; for there are none to take besides putting the patient in a somewhat elevated position; but we have to take our chances, and in my experience they have been very rare; although I have not had a large experience as Dr. Mackenzie has been good enough to intimate.

DR. H. B. WARE: Very interesting cases were brought to me today by Dr. Bierman. I think a year ago one of these little patients was brought to me—a child born blind. There seemed to be little perception of light at first, but it was not decided, and they finally brought the child to me. I examined it and found absolutely no perception of light whatsoever. I could throw a bright light in the eyes and there was not the slightest blinking of the eye thereby produced. I think the child was about three years old. The family thought there was some sight and my attention had been called to it and the Doctor had made an examination, both external and intraocular examination; and he had decided there was no sight. We tried various treatments, and there was absolutely no result at all.

A few days ago Doctor wrote me that another little one in the family had arrived in the meantime and the little infant had the same condition exactly as the first child; two in the same family. I had the case over in my office today; and some of the men who are here with you have examined it—in fact, both of the children, as well as the father and mother. In this little one, first I found a very high degree of myopia—18° or 30° of myopia; and the retina seemed to be in a normal condition. There were very few abnormalities there that I could see, only a very high degree of myopia, and yet absolutely no perception of light. In the other little one today we found large pigmentary deposits, which showed

that the condition of degeneration was there. Now in the case of these two, father and mother have absolutely no trouble with the vision; and their grandfather and grandmother were the same way—no trouble there at all; and yet here come two in the same family; one right after the other, within three years of each other; and I would like to hear the experience of some of the doctors who examined them today; but I first would like to hear Dr. Bierman cite the case as he saw it first, as he is the family physician.

DR. H. BIERMAN: I do not think there is any thing to add to what Dr. Ware has said in regard to the history of the case. He has stated the case practically as it is. If there is any person who wishes to ask questions about it, I can answer, and probably give you more information in that way.

DR. THEODORE SURETH: Did you know the history of the case before the child was born, as regards albuminuria in the mother?

DR. H. BIERMAN: The mother passed through her period of gestation normally. There was nothing abnormal as far as I know. I did not wait upon her at the birth of this child. The delivery was instrumental. There was some bruising of the tissues about the head; but I do not think that the case shows that the eyes were injured, or the eye-ball. The second case was a perfectly natural confinement. I was with her about a half an hour during the whole delivery. No instrumentation at all.

DR. J. H. BULLARD: Is there any specific history.

DR. BIERMAN: I cannot find any specific history; we don't have it in Bloomsburg.

DR. THEODORE J. GRAMM: Is there any blood relationship between the parents of those children?

DR. BIERMAN: Not at all.

DR. THEODORE J. GRAMM: There are localities where very many children are born dead and I attribute it to the fact that those near relatives habitually inter-marry. That is up near the Bushkill.

DR. BULLARD: Was either of these cases a premature birth?

DR. BIERMAN: No.

DR. BULLARD: I noticed the eyes seemed to be undeveloped.

DR. BIERMAN: They looked that way; but the child, as far as I know, came at term.

DR. MACKENZIE: I saw those cases with the ophthalmoscope; I will make a drawing, and I will ask Dr. Ware if this is what he saw (draws on board.) If this was the disc and this the mascular region, I saw a paleness—and a granular appearance here. That was the infant, the younger one, and I did not get a good look at the older one—not a satisfactory look; but off here I did find some evidence of appearance like retinitis pigmentosa. It is really a pigmentary degeneration of the retina. What I saw was little, fine spider elements; I saw it by the indirect method, but I got a very good look. This feature of it would indicate amaurosis. It affects one child after another. It generally comes in early infancy—in the fourth to fifth or sixth month after birth, and generally lasts two or three years. The child finally becomes idiotic, emaciates and dies; and it is found in the Jewish race; but this picture here is quite typical of the granular appearance around the macula.

DR. H. B. WARE: I brought this up to see if any one had had a similar experience with two such cases in the same family in such a short time. There is no Hebrew history here, of course; and their father and mother and their grandparents were in perfect health; and there was no idiosyncrasy that could point to this at all. Has any one else ever had a similar experience or observation? The case is very interesting to me, and I know especially to Dr. Bierman; and, of course, I do not see that there is any thing possible that can be done to the child. Is there any thing that can be suggested for these children, or, either one of them?

HYPERTROPHIC RHINITIS.

G. W. MACKENZIE, M. D., PHILADELPHIA.

Strictly speaking, the term "Hypertrophic Rhinitis" is a misnomer, used by the former writers to designate that pathologic condition of the nasal mucosa which we recognize today as a hyperplasia of one of its elements (more often the connective tissue,) secondary to chronic catarrhal rhinitis. No matter which term is used, the condition is a familiar one to all rhinologists and should be to the man doing general work.

The subject has been selected as an opportune one; first, because of the frequency of the condition; secondly, because of the ease and certainty with which a positive diagnosis can be made; thirdly, because of the uniformly gratifying results that may be obtained by proper treatment.

Prior to the adoption of cocaine as a diagnostic aid, the confounding of acute inflammatory swellings, vaso-motor intumescences and hypertrophies* with hyperplasias were not uncommon.

Hypertrophic rhinitis or hyperplasia of the mucous membrane, according to Parker, whom I accept as one of the best authorities upon the subject, represents the third or final stage of chronic catarrhal rhinitis; a condition, however, which is not reached in every case. From a careful study of a great many cases, the writer is inclined to accept this view. The history, the development, the pathologic and the clinical findings all support it.

From the standpoint of the history, we know the condition to be a chronic one. Patients suffering with hyperplasias give a history of frequent colds in the head with a discharge of mucus and progressive stoppage, lasting over a period of several years, symptoms which are common also to chronic catarrhal rhinitis.

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* The term hypertrophy is used, not as a synonym for hyperplasia, but instead, as a term to designate a normal anatomic condition of a turbinate (more often the inferior) met with in the wider nasal cavity in cases of pronounced septum deviation. This hypertrophy occurs under purely physiologic conditions and results from the effort of nature, by permitting an overgrowth of the normal tissues, to fill an otherwise too patent a cavity.

From the standpoint of development, we know the process to be a gradually increasing one, from the fact that we rarely find well developed hyperplasias in children; but when found, they are rarely so pronounced as in adults. Again, all who suffer from chronic catarrh do not reach the stage of *pronounced* hyperplasias; however, every case of chronic catarrh will show at least some degree of hyperplasia. In a few words, the amount of hyperplasia bears a direct ratio to the intensity and the duration of the chronic catarrh.

From the pathologic standpoint, the same inflammatory changes combined with hyperplasia of either the connective tissue, the glandular elements or the cavernous system is common to both chronic catarrh and hyperplasia. In fact, we never find bilateral hyperplasia without the pathologic findings of chronic catarrh, and never find chronic catarrh without at least some slight hyperplasia. These facts will be brought out more in detail when speaking of the pathology.

From the clinical standpoint we constantly find in conjunction with the typical hyperplasias, a picture of well developed chronic catarrhal rhinitis; i. e. more or less abundant mucous discharge, the characteristic gray or gray pink color of the mucous membrane, permanent diffuse thickness and with somewhat uneven surface. This diffuse thickening of the mucous membrane varies in different cases. In the milder cases it is merely due to sub-epithelial infiltration; in the more pronounced cases, due to actual hyperplasia, but to a less degree than in those locations where the hyperplasias are usually more conspicuous.

LOCATIONS.

In a general way, hyperplasias of the nasal mucosa are more pronounced in those locations where normally the mucous membrane, because of the greater abundance of glands and venous network, is thicker. On the contrary, because of the absence of glands and venous network, they are not found in the olfactory region nor in the sinuses of the inferior and middle turbinates. The favorite locations according to their frequency are (1) posterior ends of the inferior turbinates, (2) posterior ends combined with inferior edge of inferior turbinates, (3) posterior ends of

middle turbinates, (4) anterior ends of middle turbinates, (5) entire inferior turbinate except a small area corresponding to the central part of the concave side, (6) posterior part of the septum corresponding to an area of anatomical ridges and furrows which are found especially in children, but more or less persistent in adult life (Kollicker-"Entwicklungssch. u. Anat. d. Zwischenkiefers"—Halle, 1882,) (7) anterior part of the septum corresponding to the region of the tuberculum septi, (8) processus uncinatus (more often resulting from empyema of the cells which drain into the hiatus semilunaris, (9) diffuse œdematous or polypoid hyperplasia of the entire respiratory mucous membrane.

Unilateral hyperplasia of the anterior end of the middle turbinate or processus uncinatus does not result from chronic catarrh, but from the dripping of secretion from a sub-acute or chronic empyema of one or more of the anterior set of accessory sinuses—a fact pointed out by Hajak and repeatedly observed by the writer.

PATHOLOGY.

Microscopically, the entire mucous membrane of the regio respiratoria shows a diffuse thickening, quite firm in consistency and somewhat movable over the underlying bone. The surface is more or less irregular, due to increase in the surface area. The color is paler than normal and lacks the normal tone. The surface may be dry or bathed is a serous or sero-mucous secretion.

In the typical locations previously mentioned and especially on the posterior ends of the inferior turbinates, are seen more or less rounded, firm and quite movable prominences, resembling tumors, which are commonly called hypertrophies (hyperplasias.) These so-called hypertrophies are paler in color than the rest of the nasal mucous membrane, resembling that of recently removed adenoids. The surface is quite irregular and lobulated, frequently resembling a white raspberry. The contour of the hypertrophy is determined by the pre-existence of anatomical elevations and depressions found in the new born infant. These anatomical elevations and depressions have been determined long since by Seeberg, Hyrtl, Zuckerkandl and others.

Hyperplasias of the anterior end of the middle turbinate rarely reach the same proportions as those of the posterior end of the

inferior; they are not so pale in color nor so irregular on the surface and they tend more to become edematous or polypoid.

Microscopically, we find the same pathologic changes present in both chronic catarrh and in hyperplasias; however, more pronounced in the latter.

Chronic Catarrh WITHOUT gross Hyperplasias.	Chronic Catarrh WITH gross Hyperplasias.
(a) Changes in the epithelial layers.	(a) Changes in the epithelial layer.
1. Increase in the number of goblet cells. Whereas normally we find about one goblet cell to 100 ciliated columnar cells, in chronic catarrh we find number many times increased.	1. Increase in goblet cells, even more than is found in catarrh. The increase is often so great as to compress the intermediate ciliated cells so that they become as narrow in many cases as their nuclei.
2. Migrated round cells of the underlying infiltration may be seen between epithelium on their way through to the surface but less marked than in acute catarrh.	2. Same as in catarrh.
3. Here and there may be seen some loss in the cilia of the epithelium, more especially in cases of long standing.	3. Loss of cilia more marked than in catarrh and a greater tendency toward metaplasia, but only in very pronounced cases of long standing.

1. Seeberg, "Disquisitio microso. d. text. membr. pituit. nasi. Dorpat."—1856.
2. Hyrtl, Descript. Anatomie.
3. Zuckerkandl, Anatomie der Nasenhohle.

4. Thickening of the basement membrane found more especially when associated with chronic edema.	4. Thickening of the basement membrane more pronounced in cases associated with chronic edema.
(b) Changes in sub mucosa.	(b) Changes in sub mucosa.
5. In the sub mucosa and stroma the * round cell infiltration is less pronounced than in acute inflammation and the cells are richer in protoplasm than the cells of acute inflammation. In addition we find plasma cells, eosinophiles, hyaline spheres and hyaline granules.	5. Identical findings as in the case of chronic catarrh but more accentuated; *i. e.*, a greater number of plasma cells, eosinophiles, hyaline spheres and granules than is found in chronic catarrh.
6. Proliferation of new formed capillaries running perpendicular to the surface. The endothelia of which are plumper and the nuclei paler than is found in the older original capillaries.	6. The same proliferation of new formed vessels but more pronounced than in the case of catarrh.
7. Increase of one or more of the normal physiologic elements. In some cases the glands alone proliferate, which are found between the large veins comprising the so-called corpus cavernosum extending in many cases down to the periosteum.	7. Increase of any of the three elements — glands, corpus cavernosum or connective tissue may take place; the least frequent is that of the corpus cavernosum.

* Characteristic for the sub-epithelial round cell infiltration of chronic catarrh is that the infiltration is found more in areas than is found in either the normal diffuse lymphoid infiltration or the more pronounced infiltration of acute inflammation.

Normally we find the glands coincident with and beween the large perpendicular running veins. In catarrh we may find an increase in the size and ramification of these glands; however, I doubt very much that any new ducts are formed.	The proliferation in the case of hyperplasia, whether it be of the glands or the connective tissue, is more pronounced than in the case of chronic catarrh.
Rarely does hyperplasia occur in the veins.	
Some hyperplasia of the connective tissue is invariably found and may be noted by the increase in the number of connective tissue cells, the nuclei of which stain paler than those of the original cells, indicating that they are still young.	It would appear that hyperplasia begins more often in the glandular element and later attacks the connective tissue, for we find not infrequently dilated cysts occurring in the ducts of glands resulting from closure of the ducts by shrinking of the new formed connective tissue.
(c) Secondary changes.	(c) Secondary changes.
8. No especial tendency to edema.	8. Tendency to edema from venous stasis owing to contraction of the new formed connective tissue.
9. No atrophy.	9. Secondary atrophy of the turbinates, but never so pronounced as in the cases of so-called primary atrophy.
10. Metaplasia of epithelium does not occur in simple chronic catarrh.	10. Metaplasia of epithelium may occur late, but never so extensive as in case of primary atrophy.

SYMPTOMATOLOGY.

The symptoms in hyperplasia are, briefly, the same as those found in chronic catarrh, *i. e.*, hypersecretion, especially posterior discharge; nasal obstruction, especially when lying down; secondary pharyngitis, etc. In hyperplasia, however, the symptoms are more pronounced.

A long list of secondary and remote symptoms the writer will not take the time to enumerate.

DIAGNOSIS.

It is impossible to make a positive diagnosis from the symptoms alone. One needs to make a thorough rhinoscopic examination both before and after the local application of cocaine. Since cocaine alters considerably the appearance of the intranasal structure, it is necessary in all cases to make a preliminary examination before cocainization. During this preliminary examination one should note the general color, thickness and tone of the mucous membrane; the amount and character of secretion if any is present and the amount of breathing space existing between the septum and the turbinates, etc. Neglect to note these facts will often deprive one of valuable data.

A re-examination after cocainization is absolutely necessary. The cocaine operates to (1) shrink the tissues generally; (a) the normal mucous membrane shrinking more promptly and effectually than the abnormal; (b) transient vaso-motor and inflammatory swellings shrinking somewhat less promptly and effectually, while (c) permanent thickenings of the mucous membrane (hyperplasia) shrink but very little which causes them to stand out more prominently after than before cocainization.

(2) The cocaine operates too, to widen the spaces, thus affording a better opportunity for inspection of parts which may have been previously obscured because of transient swellings.

(3) Finally the cocaine operates to anaethtetise the mucous membrane that we may better palpate it with the probe.

Prior to cocainization one may occasionally be able to distinguish areas of hyperplasia by their prominence, irregular somewhat nodulated surface and pale color, and thus make a

positive diagnosis; however, this method is not always trustworthy.

After cocainization, these areas of hyperplasia will appear even more typical than before and can be palpated with a probe. The probe is useful in locating and outlining areas of hyperplasia and especially posterior ends by tilting them into view. One with experience should be able, with the probe, to bring a hyperplasia of the posterior end of the inferior turbinate into almost complete view or at least a sufficient amount of it to enable us to estimate the dimension and exact location of the whole hyperplasia.

The anterior ends of the middle turbinates lie directly in the field, except in cases of marked septum deviation, and should be easily recognized even by a tyro. Hyperplasia of the anterior and of the middle turbinate may be confounded with a cyst of the turbinate; however, since the indications are identical in both cases, any doubt may be easily settled after removal.

TREATMENT.

Remarks upon the treatment will be brief.

Conservative Treatment—The fallacies of the conservative treatment have been fairly well proven and generally accepted, so it is not necessary to consume further time on this point.

Radical Treatment—I find no one of authority who will deny the efficacy of operative treatment. Whereas formerly the cautery and the cautery snare were used, these methods have been generally abandoned for the cold snare or the cold snare combined with the scissors.

The various models of scissors and snares on the market are numerous. Any method to which one may be accustomed to remove hyperplasias is correct for him.

I will mention briefly the method used by myself as taught me by Hajak. In the case of posterior ends of the inferior turbinates, the simple Krause snare is used. It is opened wide enough to encircle the base of the hyperplasia and tilted at the angle best adapted to slip over the area; it is introduced through the anterior nares until it is *seen* to grasp the base of the hyperplasia and then promptly closed. The removed piece is either

blown out by the patient, removed by a forceps from the floor of the nose to where it may have dropped or less frequently spat out by the patient.

In case of hyperplasia of the inferior edge of the inferior turbinate combined with a posterior end, I use scissors to trim off the hyperplasia, along the inferior edge close to the bone, occasionally including a small sliver of bone as far back as the posterior end, which is removed with the Krause snare as described above.

In the case of anterior ends of the middle turbinates, I depend often upon the snare alone, but in those cases complicated with empyema where the removal of a larger piece, including a portion of the bone is indicated, it may be necessary to first make an incision with the bone cutting scissors along the anterior insertion of the middle turbinate, and then with the snare remove the entire anterior end.

In case of hyperplasias of the septum, anterior end of the inferior turbinate, etc., etc., one may use the instruments and method which is best suited, according to the skill of the operator. One caution is necessary, and that is, do not remove any normal or nearly normal tissue and adopt the easiest possible method whereby you can remove the complete hyperplasia with the least amount of manipulation and traumatism.

AFTER TREATMENT.

Regarding after treatment, the less, the better. I do not pack the nose excepting in very rare cases where the bleeding has become annoying. I usually allow the patient to remain in another room from one-half to two hours after the operation. If after this wait I find the patient has lost not more than a tablespoonful of blood, I put a stout pledget of aseptic cotton into the anterior nares (not beyond the vestibule) and advise the patient not to change it until it has become quite moist, and then I instruct the patient to change it only after washing the hands thoroughly, just as I would do myself before an operation. The cotton is used first to prevent blood from dripping upon and soiling

the clothes; second, and more important, to prevent the dust laden air from entering the operated side with the possible danger of post operative infection.

I further advise the patient against the use of stimulants and hot food, exercise and stooping. I have them keep the neck free from tight clothing, the head elevated, and in cases where bleeding may be feared I have them sleep the first night in a reclining chair. The patient is directed to report upon the following day. Though the patient reports no pain nor distress of any kind, there is usually some slight reaction shown by a slight amount of swelling and increased pinkness of the mucous membrane, together with a bloody, watery discharge.

The second day after the operation the reaction has diminished considerably. By the fourth day the reaction should have passed entirely, the wound is covered with a dark or black shining blood clot. This clot is shed off at the end of a week or ten days. Should any granulations be present they may be treated with a solution of silver nitrate from 5 to 10 per cent., observing care not to touch more than the granulation.

In exceptional cases after bleeding may indicate the application of gauze strips to bring pressure upon the bleeding surface. These should be avoided as much as possible, because of the increased reaction they are liable to produce.

I would emphasize one fact, that we generally learn only by experience, and that is, those cases which show the greatest amount of reaction after operation, are those which at the time of operation were suffering from some acute infection or exacerbation. For this reason I believe in postponing operation for hyperplasias in all cases presenting an active rhinitis or acute infection of any kind in the upper respiratory tract.

I have never found it necessary to use antiseptic solutions in the nose in any of these operations.

DISCUSSION.

DR. H. S. WEAVER: I do not know any nose and throat trouble, when we consider the slight seriousness of it, that will give the patient more discomfort than hypertrophic rhinitis.

The symptoms are out of all proportion to the seriousness of the disease. I have seen patients suffer very intensely from an acute rhinitis, or a hypertrophic rhinitis with acute exacerberation. I find that in a large number of cases, for instance, in the younger patients, where they have suffered from an abnormal growth and this has remained unoperated for a number of times —they have contracted a number of colds—that they will develop a hypertrophic rhinitis, and in many cases that is the reason that you have, for a time at least, an unsatisfactory result following the adenoid operation; that the children have had so many acute catarrhal conditions that the many acute colds thickening the mucous membranes of the nose results in the development of a more or less acute hypertrophic rhinitis.

I was sorry in one way that the doctor did not speak more for the local treatment and an unoperative treatment of hypertrophic rhinitis, especially in the young. I agree with him in this one point, that in the older patients, in the case of a distinct hypertrophic rhinitis, there is very little to be done except what you can do by operative interference, but you take young adults, or even adolescents, where they have a hypertrophic rhinitis following these acute colds that children are so subject to, you can do a great deal with the homœopathic remedies and the local applications; and I do not favor operative interference in the young children, unless the nasal obstruction is so marked that they have some symptoms developed that would lead you to operate; I think in many of these cases they will grow up and as they come to the age of puberty, there is an extra development of the nasal cavity and it gives them plenty of breathing space; so that with your local applications and your systemic remedies you can do them a world of good. Under such remedies as the iodide of potash, not in its crude form, but in the potencies in the thirtieth dilution, three or four times a day, continued over weeks or even months, they get a decided contraction of the membrane and relief from all the symptoms. In all these cases, what we are after is relief for your patient, and the curing of all your symptoms. Many of us have hypertrophic conditions in our nasal cavities that do not cause us any particular distress, especially where there is space enough for

breathing; and if you have a subsiding of all your symptoms, I think you can depend on your systemic remedies and your soothing applications and not operate. I do not mean to say by this that I do not favor operation; because in many of these cases, especially in posterior hypertrophy, you should operate.

REPORT OF THE SECTION OF OBSTETRICS.

A Review of Recent Progress in the Principles and Practice of Obstetrics, by R. W. McClelland, M. D.

Missed Labor, by M. M. Fleagle, M. D.

After Delivery, What Next? by Anna Johnston, M. D.

Occipito-Posterior Positions, by W. C. Mercer, M. D.

The Application of Homœopathic Remedies in Obstetric Practice, by C. S. Middleton, M. D.

The Diagnosis of Pregnancy, by R. L. Perkins, M. D.

A Peculiar Case from Practice, by C. C. Rinehart, M. D.

Non-Interference in Obstetrics, by E. H. Van Deusen, M. D.

Two cases of Accidental Abortion and Their Treatment Compared, by M. A. Wesner, M. D.

A REVIEW OF RECENT PROGRESS IN THE PRINCIPLES AND PRACTICE OF OBSTETRICS.

R. W. M'CLELLAND, B. S., M. D., PITTSBURGH.

I am duly sensible of the honor conferred in my appointment to the chairmanship of this important section, and hope with the co-operation of the members present, to make the occasion one of interest and no little profit to all. To this end I would bespeak your careful consideration of the papers presented by the associate members of this section, who have devoted time and thought and research work to certain particular phases of the subject and give promise in their individual lines to advance the frontiers of our knowledge of this noble art.

Specialists may come and go; the general practitioner, once the noblest ornament of the profession, may go for good, but the obstetrician will survive so long as the curse of Eve entails upon womankind the pangs of childbirth and its attendant dangers. Just so long, then, will she appeal to our best skill and look to us for comfort, sympathy and aid in this trying hour.

I, therefore, hold that Hahnemann's dictum here applies with special emphasis—"that in an art, the end of which is the saving

of human life, any failure to make ourselves master of it is a crime." For in no department of medicine are there greater opportunities for the exercise of skill and correct judgment, than where nature fails in her efforts to properly deliver the parturient woman, and in no case is the exercise of faulty judgment more fraught with evil consequences—consequences which have to do not only with one life, but with two or more.

It is not necessary to review here the mistakes of the past. Men were groping through the long ages toward the light, and in their progress hit upon one principle after another, which with their imperfect methods, they were able to apply but crudely. Instruments were used to facilitate labor, which have since reached a high degree of perfection in our improved forms of obstetrical forceps. Attempts were made to deliver a living child by the abdominal incision, which meant a sacrifice of the life of the mother. Implements were used to crush and destroy the foetus, again sacrificing in almost every instance the mother's life, but by the more prolonged and painful process of puerperal septicæmia, gradually these implements and procedures were perfected, and then came the epoch-making discovery of the contagiousness of puerperal septicæmia. Most distressing and appalling are the records of suffering and death which have come down to us from this period, and almost incredible in the light of our present knowledge. All those who have not read the essay of Oliver Wendell Holmes on "The Contagiousness of Puerperal Fever," with annotations on the great controversy of that time, should do so at their earliest opportunity. Accoucheurs were compelled, with shame and sorrow to report death after death of young and promising mothers from this dread malady. All unmindful of the awful consequences of their acts, physicians would attend these cases to the death, perform autopsies upon the unfortunate victims, and then without change of garment or more than ordinary washing of the hands, proceed to the bedside of those who in this important hour were entrusting to them their lives and future happiness. The consequences may readily be imagined, and for those who may not recall the history of this stirring time, it may be of interest to quote from one of the reports of cases treated; and it should be remembered that it was the common experience prior to the great awakening.

It was said of old Sairy Gamp, the much-quoted, that she went to a "Lying-In" or a "Laying Out" with equal zest. Nor was she alone in this. Dr. Warrington reported at a meeting of the College of Physicians of Philadelphia, that a few days after assisting at an autopsy of puerperal peritonitis, in which he ladled out the contents of the abdominal cavity with his hands, he was called upon to deliver three women in rapid succession. All of these women were attacked with different forms of what is commonly called "puerperal fever." Soon after these he saw two other patients, both on the same day, with the same disease. Of these five patients, three died. It is little less than a miracle that all did not die.

At the same meeting Dr. West mentioned a fact related to him by Dr. Samuel Jackson, of Northumberland county. Seven females delivered by Dr. Jackson in rapid succession, while practicing in Northumberland, were all attacked with puerperal fever, and five of them died. "Women," he said, "who expected me to attend upon them, now becoming alarmed, moved out of my reach, and others sent for a physician residing several miles away." These women, as well as those attended by mid-wives, all did well. He underwent, as he thought, a thorough purification, and still his next patient was attacked by the disease and died. He was led to suspect that the contagion might have been carried in the gloves which he had worn in attending upon the previous cases. Gloves were evidently scarce at that time. Two months or more after this, he had two other cases. He could find nothing to account for these, unless it was the instruments for giving enemata in two of the former cases and were employed by these patients. When the first case occurred he was attending and dressing a limb extensively mortified by erysipelas, and went immediately to the accouchement with his clothes and gloves most thoroughly imbued with its effluvia. Then follow dreary accounts of nurses who laid out these bodies and who soon fell sick or carried the disease to women whom they attended in confinement.

Then the scene changes to England and Scotland. Scarcely credible is the account of Dr. Campbell, of Edinburgh, who states that in October, 1821, he assisted at the post mortem of a patient who died with puerperal fever. He carried the pelvic viscera in

his pocket to the class room. The same evening he attended a woman in labor without previously changing his clothes. This patient died. The next morning he delivered a patient with the forceps. She also died, and of many others who were seized with the disease within a few weeks, three shared the same fate in succession. In June, 1823, he assisted some of his pupils at the autopsy of a case of puerperal fever. He was unable to wash his hands with proper care, for the want of the necessary accommodations. Upon arriving home he found that two patients required his assistance. He went without further ablutions or changing his clothes. Both these patients died with puerperal fever. This same man, comments Dr. Holmes, is an authority on the non-contagiousness of puerperal septicæmia.

These few instances, all occurring in the early part of the last century, are given as a side light on the practice of the times and as showing the blindness of the men of the day to what would seem to be palpable truths. As Holmes again comments: "It never appeared to them as a singular coincidence that one man or woman should have ten, twenty, thirty or even *seventy* cases of this disease following his or her footsteps with the keenness of a beagle through the streets and lanes of a crowded city, while the scores that cross the same paths on the same errands knew it by name only."

"Now add to this," says Holmes, "the fact that within the walls of lying-in hospitals there is often generated a miasm, palpable as the chlorine used to destroy it, tenacious so as in some cases almost to defy extirpation, deadly in the same institutions as the plague; which has killed women in a private hospital of London so fast that they were buried two in a coffin to conceal its horrors; which enabled Tonnelle to record *222* autopsies at the Maternite of Paris at one time; which has led Dr. Lee to express his deliberate conviction that "the loss of life occasioned by these institutions, completely defeats the objects of their founders"; and finally, "the multiplied groups of cases clustering about individuals, the deadly results of autopsies, the inoculation by fluids from the living patient, the murderous poison of the hospital, all form a tremendous indictment against the practices of the times and a source of wonder that they should have been permitted to go on so long." However, there were not wanting strong words of protest, as those of

Dr. Blundell, who said, "that in my own family I had rather that those I esteemed the most, should be delievered unaided in a stable, by the manger side, than that they should receive the best help in the fairest apartment, but exposed to the vapors of this pitiless disease"; a sentiment which in its beauty and pathos, rises to a sublime height and applies with equal force today, where the possibilities of its occurrence have been reduced to a minimum. However, this is reminiscent and it is only the purpose of the present paper to offer a brief summary of work done in obstetrical practice during the year past; with whatever comments may suggest themselves; leaving to your judgment the decision as to what is best. This will apply mainly to operative or mechanical procedures, of which many have been devised or improved upon within the past two or three years. Of these, some have stood the test of time, while others have been weighed in the balance and found wanting.

So far as the medical treatment is concerned, we still have our old and tried remedies, which I believe cannot be excelled in efficiency by any other system, and which being based upon an unalterable law, are the same yesterday, today and forever.

It only remains for us to enlarge our knowledge of the workings of that law in the application of the proper remedy. It is proposed to consider a few of the dystocias, whether caused by a deformed parturient, canal malpositions of the foetus, placenta previa, eclampsia, extra uterine pregnancy, or the obstructing presence of tumors. We hope to offer the last word on the applicability in these cases of high forceps operations, version, correction or malpositions, symphysiotomy, pubiotomy, craniotomy or Cæsarian section. Of course, it is realized that a consideration of each of these conditions is a vast subject in itself, and that doctors differ widely in their theories, as well as their modes of treatment. It only remains for us to follow the old injunction, "Try all things, prove all things, hold fast that which is good," not forgetting that in many cases with seemingly insuperable difficulties, the exercise of patience and a little intelligent co-operation with nature, will clear the way and make unnecessary a resort to harsher or more radical measures. This may account for the success of practitioners who, far removed from the great centers of advanced knowledge, have attended their

thousands of cases with but little mortality, and but infrequent resort to any of the major operations of obstetrics. Hence, it will be readily understood that judgment of a high order is necessary to the well qualified obstetrician, in addition to an adequate degree of skill in the performance of all necessary operations. Here, as elsewhere, common sense, which has been called "uncommon sense," is a saving grace. A distinguished physician once said: "A physician of common sense without erudition, is better than a learned one without common sense, but the thorough master of his profession must have learning added to his natural gifts." And so "the old woman who knows how to make a poultice and how to put it on and does it just when and where it is needed, is better than a staring pathologist who stares and thumps and guesses, and then goes home to tumble his books over and make out a diagnosis."

I incline to the belief that the current of thought, this past year has set in too strongly in favor of operative procedures, as against conservative methods. So greatly is this in evidence that it is becoming a matter of common knowledge and comment, not only within the profession itself, but among the general public. Note the frequent squibs in the public prints. Every day we see something like the following:

First physician.—"The profession has made great advances of late years."

Second physician.—"Very true. Why I can remember the time when a doctor would not think of operating when it was not necessary."

Let us guard against being carried away by every tide that sets in in our direction, but rather cling to that which is safe and sane. Happily, craniotomy and such destructive operations may now be considered things of the past.

I believe it to be the best practice in any ordinary case of dystocia from reduced diameters, to wait and give the forces of nature every chance, assisting by changing malpositions to advantageous ones, with the careful and persistent application of the forceps. I have seen many such cases delivered of living children after prolonged labors, when assistance had been sent for and preparations made for one of the major operations. However, valuable time should not be lost in fruitless efforts along these lines, and the

operation of choice should be performed in ample time to save the life, not only of the mother, but also that of the child.

As a means of enlarging the diameters and so facilitating or making possible the passage of the foetus, the operation of symphysiotomy first came into use. It accomplishes this object, but has its disadvantages in delaying convalescence or permanetly disabling the woman by a non-union of the divided portion of the os pubis; it also weakens the supports of the bladder. Severe hemorrhage is liable to occur; also injury to the urethra, or a resultant septicæmia.

Pubiotomy next came into vogue and seems to offer fewer objections and greater immunity from the above mishaps . With certain limitations, noted later, these operations are supposed to take the place of the high forceps application, which is admitted to involve at times most serious consequences to mother, or child, or both; also to supersede the operation of Cæsarian section. This would be gratifying indeed, for while the mortality of the latter has been reduced to a minimum, the after conditions are frequently a source of considerable annoyance. These methods, *i. e.*, symphysiotomy and pubiotomy, have their adherents in great numbers, and there are also those who claim these operations to be unjustifiable in any case. So far as my own experience goes, I will say that although in the active practice of this branch for more than twenty-five years, and in that time no doubt attending the usual number of cases, I have never found one in which either operation was absolutely necessary. Among the number I could enumerate many cases, but none in which delivery could not be, or was not effected by patient efforts in correcting malpositions and the application of forceps, or both. In no case was there loss of life, except one from placenta previa, complicated by a severe fall, precipitating labor at the eighth month. I saw this case only at the last moment, when the patient was *in extremis*. Here the mother and child both died.

In one case the child was delivered by high forceps operation, after a prolonged and difficult labor. The child was moribund and died in a few minutes. This was the nearest call for a pubiotomy, but it occurred fifteeen years ago.

In the following year I delivered this same mother, also by a tedious high forceps experience, of a living child, both mother

and child remaining subsequently in the best of health. One child died as a result of a delayed after-coming head in a breech presentation. In this case I was called too late to perform a version or give other needed assistance.

One more item is to be added to the mortality list; in a case of rupture of the uterus in the lower segment, where the diagnosis was at first difficult, and where death ensued after a severe hemorrhage which did not afford time to perform a porro.

This experience, with its freedom from operations of a capital nature, was, of course, merely a matter of good fortune. Had there been a case of sufficiently deformed pelvis or with the obstructing presence of tumors, the indicated operation would have obviously been necessary.

However, there have been a sufficient number of cases to prove that conservatism is of great value in carrying difficult cases through to a successful conclusion. As regards pubiotomy in comparison with other methods, Dr. Charles B. Reed, Chicago, Illinois, in a paper on pubiotomy read before the Chicago Gynecological Society, March 11, 1909, says that pelvic contraction to a serious degree occurs in one out of every twenty of these cases. "Furthermore," he adds, "in this 5 per cent. of all cases, it is recognized that the generally contracted and the flat pelvis occur with the greatest frequency, constituting not less than 75 per cent. of the bony obstacles that may complicate labor. While not limited entirely to this field, yet the operation of pubiotomy is most useful in these cases of pelvic contraction."

Pubiotomy as an additional resource in these cases has been deemed necessary because, in Dr. Reed's words, "The mortality for the child in cases of generally contracted flat pelvis where labor terminates without interference, is given by Von Wincel at 20 per cent., or one in five. In labors artificially terminated we find a mortality for the child from version and extraction of from 35 to 60 per cent. From forceps 35 to 60 per cent. From premature labor, 30 per cent. or more of the children die during the delivery or shortly thereafter. * * * What is the aim of the operation (pubiotomy) or having done the operation what is thereby accomplished? Primarily, with a separation of 3 cm. between the ends of the bones there is an enlargement of the

pelvis in all its diameters of about 1 cm. This will permit the woman to deliver herself of her babe in most instances without further interference, but if interference is required, it may be undertaken in what is now a fine roomy pelvis through which either forceps or version is likely to bring a living child. Lichtenstein reports a series of 154 cases of version and extraction in which 110 were done before pubiotomy with a mortality of 32.82 per cent., while 44 done after pubiotomy gave a mortality of only 13.64 per cent."

By the operation of pubiotomy, Dr. Reed claims the cases of difficult version and extraction, and difficult forceps, will be reduced to a minimum, or if done will be done under the most favorable conditions. The percentages of contracted pelvis above quoted, are probably too high, higher than given by most authorities. Also, the mortality lists take no account of the cases of chronic invalidism.

Dr. Richard C. Norris, Philadelphina, Pa., in a paper on 'The Management of Labor Obstructed by Pelvic Disproportion," read before the Pittsburgh Academy of Medicine, March 9, 1909, argued in favor of inducing labor after the eighth month of pregnancy and as late as the studied relative disproportion (between head and pelvis) will permit, in order to help those cases that without this aid would after test labor at term, require either a major operation, such as Cæsarian section or pubiotomy, with their increased maternal mortality in virtue of the test labor, or a very hard high forceps delivery with its large infant mortality.

In 3,000 consecutive labor cases at the "Preston Retreat," he says: "I have not once performed Cæsarian section, and labor has been induced in every case of moderate disproportion entering the hospital before term. There has been a maternal mortality in these labors, and the infant mortality was 10 per cent. The infant mortality in unobstructed cases has been about 7 per cent."

Dr. Harold A. Miller makes a strong plea for the inducement of premature labor in cases of moderate disproportion, in a paper on "Operative Procedures for the Relief of Dystocia," read before the Pittsburgh Academy of Medicine, March 9, 1909. He says: "In the general practice of obstetrics as it exists today,

the most popular therapy of narrow pelvis is the induction of labor after the foetus is viable, but still small enough to pass the narrowed or obstructed birth canal, the application of axis traction forceps or version and the extraction of the child. In the statistics which I have tabulated regarding the induction of premature labor, in all having collected some 1,500 cases, I find that the maternal mortality is 1 4-10 per cent., while in pubiotomy the collected cases have given a maternal mortality of 2 8-10 per cent.; in Cæsarian section, in the last five years the statistics which I have been able to review would indicate a maternal mortality of about 6 3-10 per cent." This experience is worth considering.

Dr. Hudson D. Bishop, of the Cleveland Homœopathic Medical College, lays special emphasis on the importance of antepartum measurements of the pelvic diameters. This is particularly necessary in the general practitioner, who, as Dr. Bishop says, "does by far the greater portion of the obstetric work." Dr. Bishop presents in a clear and forcible manner the indications for Cæsarian section, symphysiotomy or pubiotomy in contracted pelvis; of the latter two giving the preference to pubiotomy.

His summary is as follows:

"1. Choose Cæsarian section in all cases of absolute pelvic contraction (a true conjugate 7.5 cm. in generally contracted and 7 cm. in flat pelvis) and in the cases slightly above these measurements, unless the head is small.

"2. Choose spontaneous labor in all other cases, and if after a fair test of labor, engagement does not take place, use high forceps (axis-traction) widening the pelvis by pubiotomy, if delivery cannot be made easily with forceps."

Pubiotomy is believed by many to be a better operation than Cæsarian section in all of the cases of contraction, when an enlargement of the brim within the limits of the operation will permit of the passage of the head. Instead of separating the pelvic girdle at the symphysis, as in symphysiotomy, the pubic bone, near the symphysis is severed with a saw, on the side toward which the occiput points. The chief indication for pubiotomy is a mechanical obstruction from pelvic contraction that

will disappear after an enlargement of the brim within the safe limits of the operation, *i. e.*, not more than five or six cm. The effect of widening the pelvis by separating the pelvic girdle at or near the symphysis, is to add about two mm. to the true conjugate for each cm. of separation.

Dr. Bishop believes that it will come into more general use, especially as it does not require any extraordinary degree of skill, and that it will be used in many high forcep cases, where there is danger of foetal mortality. There are many drawbacks to this operation, such as: non-union, more or less permanent weakening of the pelvic structure, hemorrhage and injury to the soft parts; but these do not outweigh its large field of usefulness.

Among the few advocates of symphysiotomy, as against pubiotomy, is Dr. T. Mitchell Burns, of Denver, Colorado, who in the September number of the *Journal of Surgery, Gynaecology and Obstetrics*, says: "Ever since symphysiotomy was brought before the world by Pinald and Harris, I have been a firm believer in its value in elective cases. Ever since pubiotomy came into vogue, I have been awaiting its downfall. Today symphysiotomy is almost of the past and pubiotomy is waning, but I still have my old ideas about symphysiotomy." The doctor then describes an improved technique by which the uretha and bladder wall are drawn back by means of a hard rubber sound. In the case quoted the mother made a good recovery, but the child died almost immediately after birth.

These operations are not, of course, intended to compete with Caesarian section, which is the operation of choice where a living child cannot be delivered by any other means. Most authorities also agree that since this operation is attended by such a low mortality, even in second and third cases, a sterilization of the woman is not justified, except in the presence of diseased conditions.

Much has been said of the operative treatment of placenta previa. Dr. H. A. Miller, (*Amer. Jour. of Surg.*, Jan. 1909,) reported eleven cases operated on by him for the control of hemorrhage associated with placenta previa, by ligation of the uterine artery through the vagina. Of these cases he lost two by delivering without waiting until shock had been combated.

"This operation," he says, "can be done without anesthesia, does not injure the organs of generation, cuts off the blood supply to the placenta, and removes the necessity for haste in dilating the os." The operator will perhaps look with doubt upon this expedient.

At the thirty-fourth annual meeting of the Amer. Gyn. Soc. held in April, 1909, at New York, the consensus of opinion was unfavorable to resort to Cæsarian section in placenta previa.

Dr. H. D. Fry, of Washington, D. C., said: "The recent obstetric text-books by Williams, Jewett, Peterson, Edgar Webster, Hirst, written by men who have had large experience in Cæsarian section, as well as in the obstetric treatment of placenta previa, condemn the operation except in a small percentage of cases."

He held that the conditions indicating abdominal Cæsarian section will occur in about 5 per cent. of all cases of placenta previa. These conditions include primiparity, a small vagina, a rigid and undilatable cervix, and placenta previa centralis.

Dr. Fry significantly added: "The frequency with which one meets with a rigid and undilatable cervix complicating placenta previa depends, to a great extent, upon the obstetric experience of the individual operator."

Again Dr. Fry said: "Any preliminary treatment, except possibly the careful aseptic packing of the vagina to control hemorrhage until preparations can be made to operate, removes the case from the classical Cæsarian indications. Tamponade of the vagina done hurriedly and without strict aseptic technic, as in emergency work outside a hospital, carries with it the danger of infection. The Porro operation then offers the best chance to save the mother. Invasion of the cervical canal, whether by gauze tamponade, hydrostatic dilators, effort at instrumental or manual dilatation, remove the case from the classical Cæsarian to the Porro operation. In every case without every facility for the work, Cæsarian section for placenta previa should be eliminated and obstetric methods employed."

My own experience with placenta previa has been satisfactory in all cases seen sufficiently early. The treatment has consisted mainly in a careful packing of the vagina, persisted in until suf-

ficient softening and dilatation was obtained to remove a centrally implanted placenta with the hand and apply the forceps. In these there was no mortality to mother or child. Special attention was given to sustaining the vitality of the mother during the exhausting process, and much benefit was obtained by the administration of china during and especially after delivery.

In extra-uterine pregnancy, results have been most excellent by a careful system of antisepsis and an improved technique. As to indications and mode of operation, Dr. Deaver says in a recent paper on this subject:

"I am willing to grant that a patient should not have a 'pen-knife' operation done on her before she has recovered from her first faint. There is reason in all things. It is equally true that a patient in *articulo mortis* should not be subjected to operation. * * * * My position then is this: A continuance of the collapsed condition, commonly, and as I believe, erroneously, termed shock, for a longer time than one hour, indicates that a considerable hemorrhage has occurred and may be continuing. The surgical indications are clear—stop the bleeding; stimulate. Since 1900 I have had 110 cases of extra-uterine pregnancy, many of them of the acute type, without a death.

"My procedure in these urgent cases is as follows: If the condition be very low, stimulation is begun on admission by hypodermoclysis and strychnia. If there is extreme restlessness, morphia is a valuable adjunct. They are placed on the table with as little disturbance as possible, and a light, quick etherization given. Preparation is rapidly completed, and intravenous transfusion of normal saline solution started as the abdominal incision is made. 'Get in quickly, get out quickly,' applies here as forcibly as anywhere in surgery. The offending tube and ovary are removed. The clots are scooped out, and if the condition of the patient warrants, the abdomen is flushed out and filled with normal saline solution. * * I wish to call attention to the value, or rather the necessity of filling the empty blood vessels with saline in these depleted cases."

In reporting an extreme case, successfully operated on, Dr. Deaver mentions the amount of saline used, viz., by hypodermoclysis at the beginning, 1000 c. c.; intravenous transfusion during the operation, 2000 c. c.; left in the abdomen at least 1500 c. c. Then

in the twelve hours after the operation her thirsty vessels absorbed by way of the large bowel, 4000 c. c. additional. Nearly nine liters of saline, over two gallons of fluid to meet the mechanical needs of the circulation.

For a serious condition, it is wonderful with what generally uniform success it has been treated.

In such troublesome conditions as hour glass contraction during labor, Dr. Elmer Sothron, of Washington, D. C., finds (*Amer. Jour. of Obstetrics,* September, 1909,) that meddlesome midwifery has undoubtedly a great deal to do in bringing about this condition: such as the early rupture of the amniotic sac, the abuse of ergot and other drugs, and the too hasty attempt to deliver the placenta by traction on the cord. The following are his conclusion:

"1. Avoid meddlesome midwifery, such as early rupture of the amniotic sac before it has thoroughly performed its functions as a dilator or extender.

"2. Avoid the use of ergot or other drugs of similar action until the completion of the third stage of labor.

"3. Avoid interference with normal uterine action by the prolonged use of chloroform or ether.

"4. Avoid the danger of stimulating spasmodic uterine contraction as well as danger of rupture of the cord by an attempt to deliver an adherent placenta by traction on the cord."

Undoubtedly, good advice.

In the treatment of eclampsia, hygienic, adjuvant and dietetic measures should be directed toward early elimination of the poison But in this disease, homœopathy has won great laurels, and principally by the administration of such remedies as kali chlor. and cupr. ars., as preventatives of the attack. When properly prescribed, they act with almost unerring certainty. As regards our armamentarium in the treatment of the vomiting of pregnancy, a great and notable addition has recently been made through the painstaking and successful researches of Drs. Blodgett and Starbuck, of the Homœopathic Hospital of Boston. They found that a certain class of cases of vomiting of pregnancy were invariably associated with the presence of acetone and diacetic acid in the urine. Also that these cases were uniformly of a severe type—pernicious or malignant vomiting, that form which requires the induction of labor to save

the life of the mother. Also that it most generally occurs, with the indication for the remedy, in the later months of pregnancy. The remedy is bicarbonate of soda in a certain definite dosage; namely, 30 grains dissolved in a glass of water, 1 teaspoonful every quarter hour, so as to complete the total of 30 grains in a day. In ordinary cases, not associated with the presence of these bodies, the remedy was inert. But it is in these, that the homœopathically indicated remedies are sufficiently effective. Drs. Harold Wynne Thomas and George Burford report cases in which, to use their own expression, the effect was "dramatic." It is also claimed the remedy is of equal efficacy whether used in the early or later months of pregnancy, where the condition co-exists with acetonuria.

I cannot close this paper without, in the first place, making a strong plea for the more careful study of our materia medica as it relates to all conditions associated with the ills of pregnancy. It will be found to richly repay us for the effort. And finally, I wish to enter a protest against what might be called an over-zealous or exaggerated technique in the management of labor. The tendency is to surround the patient, even in the ordinary, uncomplicated case, with an elaborate array of instruments, even going so far as to place the patient on an operating table. All this, with a complicated system of asepsis, tends to fill the mind of the prospective mother with feelings of apprehension and alarm, and serves no good purpose. On the contrary, it adds to the discomforts of her condition and retards convalescence. To put it mildly, it is the silliest performance imaginable, and unworthy the true disciples of the healing art. Nor is that all. The excessive scrubbing inside and out, with the irritating solutions applied, have the effect of denuding the surfaces and greatly lowering the natural powers of resistance. This renders the subject more liable to absorb, or be inoculated with certain septic elements which must unavoidably come in contact with the surfaces deprived of their natural protection. Let us have done with this folly and devote our energies to the higher development of an art which deserves our utmost devotion.

MISSED LABOR.

M. M. FLEAGLE, M. D., HANOVER.

Protracted Gestation (Partus Serotinus) is a subject rarely touched upon. Even text-books on Obstetrics do not give a satisfactory definition or explanation of the phenomena of this condition. There may be several reasons for this. In the first place, there is a great difference in the time of gestation, even under most normal conditions.

For instance, the duration of any given pregnancy is a question incapable of accurate determination because of the absolute uncertainty attendant upon the date of conception.

There are but *two factors* upon which such an estimation can be based, namely: (1) a single coitus the date of which is known, and (2) the date of menstrual suppression. I will try to show that there may be a natural error in either of these calculations. Probably the most accurate estimate of the duration of gestation can be made in those cases in which there is a *single coitus*, the date of which is known.

It has been demonstrated that spermatozoa may retain their functional activity within the genital tract for *eight* or *ten* days, or longer, and during any portion of this time might fecundate an ovum. Hence the precise time at which the spermatozoid meets the ovum cannot be accurately determined, and gives rise to a source of error. When we make the estimate from the date of menstrual suppression, we are liable to even a greater source of error, for a study of the relationship existing between menstruation and ovulation shows that the two phenomena do not necessarily co-exist, hence an error of three weeks or more may be made when the estimate is based on menstrual suppression. Again there are cases in which menstruation may continue for a variable time after conception; and yet again conception may take place during a pathologic suppression of the menstrual period. These, then, are what may be termed the natural sources of error in computing the duration or variability of time of gestation. But you will say, what is the importance of going into this subject so minutely? In reply, I will

say, that it may be necessary to determine the legitimacy of a child, or even the paternity of it, for upon such accurate decisions depend the legal disposal of large sums of money by inheritance, or otherwise, as, for instance, when supposititious children are advanced as legitimate heirs, or in cases of blackmail. A more practical reason is, that the services of a *physician* and *nurse* may be secured at a stated time, otherwise the life of the patient might be seriously endangered for want of proper attention.

From a large number of observations, in which the approximate time was known, it was found that 280 days—ten lunar, or nine calendar months (forty weeks), is about the *normal duration* of pregnancy. In many countries, the utmost limit to which a legitimate pregnancy may extend, is decided by law. Thus in France, Italy and Scotland the limit is 300 days; in Germany, 302 days is allowed. The United States has no such regulations, I believe. These cases are interesting to me because they give rise to several important questions. The case that I shall present to you may be interesting as a "freak of Nature," if for no better reason.

CASE: Mrs. —, aged 37 years; married 16 years; the mother of three hearty children, all boys, the eldest being 15 years of age. The mother is a robust, healthy-looking woman. She last saw her menstrual period on December 20th, 1907, *i. e.*, this date was the last day of menstruation. The subsequent suppression proved to be due to pregnancy. There seemed to be nothing unusual during the period of gestation, as she felt perfectly well, and attended to her accustomed duties—that of housewife. The accouchment should have taken place about September 26th, 1908 (figuring on the basis of 280 days), but there was no signs of oncoming labor, the patient continuing her duties without any discomfort. Foetal movements continued active until about October 16th, 1908, when they were no longer noticeable by the mother. An examination on October 20th showed a dead foetus. The problem now arose as to the better course to pursue. I determined to give Nature a chance, even at this late date, for there had not been the least effort, up to this time, on the part of Nature, to terminate this pregnancy. I waited, but watched the patient carefully. Finally, on November 10th, 1908, the patient arose in the morning as usual, but was taken with a severe chill, and headache. Surmising that this condition might be

caused by septic absorption from a macerating foetus, I determined to operate. Assisted by my sister, Dr. Roberta Fleagle, who administered the anaesthetic, I dilated the mouth of the womb carefully, but was compelled to do version before I could deliver the child, which was badly macerated. The placenta was entirely adherent, the adhesions being very firm, necessitating its removal in small pieces. The mother made an uneventful recovery, sitting up in her room on the 10th day after the operation, and felt perfectly well and strong, not having had any unfavorable symptoms at all.

Now, Nature made absolutely no effort at all in this case, as there were no signs of any uterine contraction until after I began to operate, and I operated simply from fear of septic absorption.

We find, then, that from the time of menstrual period ending on December 20th, 1907, until the patient was delivered, November 10th, 1908, that a period of 325 days elapsed. Now, granting that the foetus died on or about the 16th day of October, 1908, we would yet have a pregnancy running about 300 or 301 days, and even then terminated only by artificial means. The interesting question naturally arises in my mind as to what is Nature's essential, etiological factor in terminating gestation, or perhaps more clearly, what is the essential cause of labor?

What factor was missing in the foregoing case? To me, the chief factors usually assigned (see American Text-Book of Obstetrics, page 318) are negatived, with one exception, by the unusual features of the case cited. The exception noted, viz.: "Changes in the Decidua—loosening, etc.," especially *loosening*, I believe to be the most important factor in causing labor. This belief is borne out by the fact that in the case just cited, there had been no uterine contractions at any time previous to the operation, and none *during* the operation, until I began loosening the placenta (which I found entirely adherent), when the uterine contractions began, and rapidly increased to such an extent that I had difficulty in removing the later portions of the placenta, and there was practically no hemorrhage notwithstanding the surgical anaesthesia. Whether there is some special agent formed in the placenta, and liberated during the loosening process, or whether the loosening of the placenta acts simply as an irritant to the sympathetic nervous system, I cannot say, but I am inclined to the latter belief.

The other question relative to the subject of this paper is: Can Nature ever make a mistake?

If this paper should be the occasion of bringing about any discussion which might lead to any further stimulation of research along the lines indicated, I shall feel well repaid.

DISCUSSION.

DR. W. C. MERCER: This is certainly a very interesting case. I recall only one apparently similar one; although this woman, after the foetus had died, and had been dead for some time (because the child was macerated,) began having some pains, although apparently not having any effect on the cervix, so far as dilation was concerned; so an attempt was made to deliver the woman; and in attempting the delivery, on account of the child being dead so long the uterus was very soft, and was ruptured; and we then opened the abdomen and removed the uterus; so I do not remember whether the placenta was removed or not; but the placenta was rotten, because you could push your finger through it with very little trouble.

As far as causes of labor are concerned, pretty nearly all authorities who have done much of that kind of work, have different theories; so that at the present time they are undecided just what is the cause. Every man who practices has his own ideas about it; and as far as counting from the time that they become pregnant, as the doctor says, unless they have had absolutely only the one chance to become pregnant, it is an uncertain matter.

DR. ANNA C. CLARKE: In trying to prepare an essay on the subject of pelvic diseases, complicating pregancy, which I have been unable to finish, this subject was brought into my field and I have found that where a uterus failed to contract or failed to deliver itself, that there was usually some disease, either as remains of an old gonorrhoea, or some pelvic inflammation which seems to inhibit even the least beginning of labor pains. I have noticed that confinements where we had an inertia of the uterus, in following them up a little while many of them, we would find, developed a salpingitis, or some disease of the surrounding tissue; and I have wondered if this might not

have been the case in the particular case the doctor cites, and delayed the uterus from emptying itself. I am aware of the fact that often an inflammation of that kind may precipitate labor and bring it on some time prematurely. However, it has also the opposite effect; and I have frequently noted that effect.

I recall several cases where labor has set in and where everything has been natural except the inertia. Where we could make it out more clearly an inflammation of the tubes sometimes was established.

DR. THEODORE J. GRAMM: I should like to inquire whether this woman exhibited any systematic disturbances, any hereditary disease, for example syphilis, or conditions like lead poisoning, etc.; or whether there was anything peculiar about her occupation, or the locality—the hygienic conditions under which she lived—that might have influenced this condition.

DR. M. M. FLEAGLE: In reply to Dr. Gramm's question, I will say that so far as I know there was nothing, either in her residence or as far as her general physical condition was concerned, that would indicate that she was at all diseased. She was a very robust, healthy looking person; and I have known her for probably ten years; and in that time I do not think I have ever given her any medicine at all; yet I am her physician. If she is diseased in any way, she has not displayed it, does not complain of feeling badly and apparently looks healthy.

DR. R. W. McCLELLAND: In all or nearly all of the cases of macerated foetus that I have seen I found an inherited syphilitic taint. I think we can say that in a large proportion of these macerated foetuses syphilis is the cause.

AFTER DELIVERY, WHAT NEXT?

ANNA JOHNSTON, M. D., PITTSBURGH.

In presenting this paper, I have no wonderful experiences to relate, no new theories to promulgate, nor new methods to propose.

It is only a brief review of the points of procedure, and an occasional emphasis of some of the details to be carried out in the last stage or period of the parturient woman, that period which closes the long months of weary waiting, and ushers in a new existence. She is now a mother—her future, as to her health, and even that of her babe, may depend largely upon the skill and care of the obstetrition and nurse during this time.

While we know that the whole period of gestation is one over which the physician should exercise careful watchfulness, this last period is one full of grave responsibilities and requires just as skillful attention.

Just here I would urge that the most skillful nurse that can be found is none too good for the case. A good trained nurse is certainly a great comfort, both to patient and physician. Economy is generally commendable, but when it comes to the selection of a nurse for an obstetrical case it is a great mistake to count dollars; of course, I know that many cannot afford a trained nurse, while others think they cannot; yet, I always insist upon it even if I know it requires a sacrifice on the part of the family, feeling that the trained care means so much to mother and babe.

I have had physicians say to me that they prefer an experienced nurse to a trained one—but that must have been because their trained nurse had either not been properly trained or was not the right nurse. I have had all sorts, but never could I declare that preference.

So much for the nurse, next asepsis: This subject I pass over, for in this day of advanced surgery no physician would think of approaching the partrurient case without having thoroughly disinfected himself and all his paraphernalia.

Now to our work, as the Scotchman in one of our recent novels said, "First things first." Our babe has ceased his intrauterine life,

and started upon his future career with a lusty shout telling us that he has lungs and a heart, and the census enumerator can record another member in his district.

Quickly bathe his eyes with boric acid solution or if specific infection is suspected a weak solution of nitrate of silver, say 3 per cent.

If the cord has ceased pulsating, cut it, wrap the infant in a warm blanket, lay it down on the right side, leaving it until we are through with our attention to the mother. When we return to the baby do not forget if it should be white, cry faintly and seem weak, to examine the lungs carefully, for we may find with the above symptoms that one or both lungs have not fully expanded, which later on may result in atelectasis and suddenly our babe may slip away from us.

With the birth of the infant, the period fraught with greatest danger to the mother is present. The hand of physician or nurse should be placed upon the uterus, it is easily ascertained whether contraction is properly taking place. If the placenta is slow in becoming detached, do not hurry, wait!

Some repair perineal lacerations at this time, while others, equally as good authority, prefer to wait until the placenta has been expelled.

As I said, it is about this time we are liable to have hemorrhages, so I will digress slightly and differentiate between the sources and control of these hemorrhages. They may be from the cervix caused by a deep laceration. The cervical hemorrhage is generally profuse before the placenta is expelled.

If the hemmorhage occurs ten or fifteen minutes after the birth of the child it is hardly due to lacerations. If due to atony of the uterus there will likely be a profuse, continuous, non-clotted bleeding, occurring after expulsion of placenta; uterus flabby, or hard with soft spots.

If hemorrhage is profuse, occurring in paroxyms, clotted, usually synchronous with uterine contractions, you will probably find portions of retained placenta.

The symptoms found with great loss of blood are: Soft compressible pulse, cold, clamy skin, pallid expression of face, dilated pupils, rolling of eyeballs, twitching of eyelids, dimness of vision, dyspnoea, etc. Fainting after second stage is due to cerebral anaemia from visceral engorgement, and not to hemorrhage.

Control of hemorrhages:

1. If due to lacerations repair them immediately.

If from atony, do not forget the indicated remedy: Raise the foot of bed, crede the relaxed uterus, hot saline douche, or hot acetic acid solution, or tampon the uterus by taking a five yard strip of sterile gauze saturated with gelatine and adrenaline. In removing the gauze, do so slowly, but a foot at a time, and at hour intervals.

If hemorrhage is from retained placenta, express the placenta by uterine compression, manual extraction or uterine pack.

Acute anaemia, indicated remedy: Hot water bags; see that all bleeding has ceased. If very severe, hypodermoclysis is very efficient.

The placenta being expelled careful examination should be made to ascertain if there be any cervical or perineal lacerations—if so, I think it best to repair immediately unless contra-indicated by the patient's being exhausted or in a collapsed condition. My reasons for this are, at this time the patient is still partially under the influence of the anaesthetic, as I always use the anaesthetic during the second stage. A very little more and she is completely under. With competent help, it takes but a short time, and then her worst trials are over. It is a great relief to the patient to know that no further ordeals await her.

Then again, many women refuse to go to a hospital or even allow an operation to be done at home—preferring to drag out a weary, nervous existence with a lacerated cervix, risking malignancy in later life or the different forms of uterine displacements following the loss of the perineal floor.

The next step in the attention to the mother is the placing of the binder. This is a disputed point. Obstetricians are about equally divided as to its use. Those who favor it, say that by keeping a pressure on the uterus hemorrhage is prevented. Another and perhaps the best reason is that this pressure upon the abdominal walls and blood vessels, which are lax and flabby after delivery, prevents the blood from rushing in from other parts of the body causing anaemia of the brain. It should only be worn two or three days at farthest. Occasionally, when the patient has resumed her daily duties, if there is a relaxed feeling in the abdomen accompanied with

a sensation as though everything is going to drop out I have them get an abdominal supporter and even adjust a pessary, if the uterus seems very much relaxed, and wear these until involution has been completed.

As to the use of douches, their employment depends largely upon the case. If the lochia are very profuse and the odor is heavy, a hot saline, or creoline douche is comforting as well as helpful. If there is the slightest danger of infection or any suspicion of specific trouble bi-chloride of mercury 1 to 5000 is used immediately, thus using the ounce of prevention.

The length of time the patient stays in bed also depends upon her general condition. If everything goes well not over ten days, if there are no lacerations and patient is not too much relaxed, circulation being good, it will be of benefit rather than harmful to allow her to sit up even before that superstitious ninth day on which the organs are all supposed to go back to their original position. In allowing her to thus early leave the bed, she does not become so weak, consequently sooner regains her strength. Kroenig, in giving his experience along this line, says that since he has adopted the method of anaesthesia to remove the pain of childbirth, thus preventing the patient from being so exhausted, in his private work has allowed about 70 per cent. of his patients to get up on the first, second or third day. Of these very few had rise of temperature, he did not lose a single patient, and had no cases of thrombus nor embolus, as against 3.4 per cent. of those who got up on the eleventh day, and they were better able to nurse their babies, while involution proceeded quite as fast as in those who stayed in bed.

He claims that by thus preventing the lochia from remaining in the vagina and feces in the rectum much is gained. Also, by letting the patient up early, her appetite increases, keeping up her bodily strength as well as her spirits, thus raising the resistance against infection.

He has his patients carry out a system of gymnastics, which strengthens their abdominal and pelvic muscles, thus preventing all inclination to prolapse.

Of course, Dr. Kroenig's patients are not high-strung American women, but it would be well to keep in mind his methods, studying

our patients, and being careful to neither keep them in bed too short nor too long a time.

I think it a very good rule to have the mother, after she is able to be around, to lie down to nurse her babe. This gives her about twenty minutes to an half hour's rest and relaxation, every two or three hours, and certainly it is very beneficial to her as well as to the child.

The bowels should be moved in from twenty-four to thirty-six hours after delivery. I never give a cathartic unless there has been a bad laceration and I desire a watery stool in order that the stitches may not be strained. If, after the first enema, the bowels do not move voluntarily, it is repeated on alternate days.

Dr. Du Bois advocates having the woman drink two glasses of cold water before breakfast and then instructing her that one hour after drinking the water to make an effort to have a bowel movement. It is a psycho-therapeutic agent, but if properly given will generally give the desired result.

It is better, if the patient is able, to allow her to use the vessel in bed and to raise her up on it, rather than use a bed pan; if possible I always follow this plan for the first voiding of urine, thus getting rid of any clots that might have formed.

The diet largely depends upon the patient, as does the indicated remedy. My rule is to give a very light diet the first day, consisting largely of milk, if she can take it, and gruel, preferably oat meal. After the bowels move, milk toast, poached or soft boiled eggs, raw or stewed oysters, baked potato and apples, cornstarch, gruel, milk or cocoa.

This diet I allow until about the sixth day, when I allow her to cautiously resume her normal diet, excluding coffee and even tea, if she is at all nervous, acids and all heavy vegetables such as cabbage, etc.

If the milk is scanty, beets are helpful, coffee very deleterious. Milk should be given between meals, at bedtime, and even a glass during the middle of the night.

No visitors are allowed the first week; really for two weeks is better. This rule I insist upon.

MEDICATION.

Not long ago I felt very sorry for a young doctor, who said in obstetrics medicine is of no use. That is a mistake, this part is not theory—it is actual knowledge—I know they do act, for I have given them and seen the results.

After labor, if no complications have arisen, I give arnica on account of the bruised condition of the tissues; it also has an influence upon the after pains. If you have an adherent placenta there are sabina, caulophyllum, cantharis and pulsatilla. If you have shock do not rush for brandy or whisky, for you have strophanthus, china, chinin ars, arsen, alb and carbo veg., any one of which is preferable and leaves patient in better condition.

What about caulophyllum in after pains? They disappear so quickly that you yourself are even surprised.

You also have gels., cimicif, arnica and viburnum. No morphine or any of the coal tar preparations are needed by homœopaths for this condition. Septic infection will not last long if you have echimacea. There are other remedies that give beautiful results, such as chinin, ars., baptisia, lachesis, pyrogen and arsenicum.

Hemorrhages certainly test our courage but you have better remedies than ergot. Sabina works quickly and well. Ipecac, china, trillium and secale, in potencies and according to their indications.

DISCUSSION.

DR. MILLIE J. CHAPMAN: Notwithstanding your chairman has all the morning told the gentlemen of the importance of the cases and then called upon me, I hope I will be able to make a manly speech.

This paper has reviewed in a generally good way, the things that come after delivery. There is very little to be added.

In the mention of the nurse the doctor prefers the trained nurse. I have seen some experienced nurses that gave the patient all necessary good care; and it is good care the patient needs, whether the nurse has been trained, or is experienced. We have failures in both classes; but it is a time of all times in a woman's life when proper care should be given.

She says when the placenta may be retained, wait. Of course

she meant to say, it depends on the condition of the woman. If hemorrhage has started, she should not wait. Then she advocates the use of the binder. We have always been taught to look for the indicated remedy. Now, in the use of various appliances at this time we must see whether these appliances are indicated.

There are times when the use of the binder makes the patient more comfortable, and does seem to keep the tissues in a better state. There are other times when the application of the binder makes your patient restless and uncomfortable, and makes her wakeful, and then it is a bad thing to use. If you know your patient and know your work, you will know the cases when the binder is a good thing.

There are some patients who have a prolapsed condition of the intestines from the forced contraction of the waist and abdomen that has been produced by the clothing (the corsets, etc.); and when delivery has occurred and the uterus has been evacuated, there is that sense of goneness and discomfort that cannot be relieved without the application of the binder; and if it is properly applied and kept on until the convalescence and recovery—perhaps a little longer—the patient is a great deal more comfortable.

She says, in case there is a suspicion of specific infection, to use bichloride douches. There are cases where the use of the pix-cresol is good; and when we are told that there are cases that may get up at nine days, of some a little bit before. I think we should educate all our patients that at this time there should be care, and caution them against the recent suggestions of getting up in one or two or three days. There are many women who, at this time of all times in their lives, get a little rest. As soon as they are able to be on their feet, the care of their children and the care of the house must come to them; and it is quite as important that they stay in bed long enough to thoroughly recuperate; and if we now distinguish between our cases—those that must be retained to get the necessary restraint and tell them that it is a case that requires about three months for the uterus and the other organs to fully resume their position, we may be able to persuade them to stay long enough.

She advocates the use of gruel as one article of diet. We must not forget that in case the mammary secretion is small, corn meal gruel will increase the milk, it will add to the nourishment of the

babe, it will help to have the digestion go on and have the bowels moved often; and it increases the flow of milk better than almost any other article of diet.

She spoke of the use of beets. We must remember, if we give beets at this time, that they be boiled, and dressed with butter and salt and not vinegar, as that sometimes makes a very serious complication.

The paper is a good one; each has his or her own ideas; but do remember to caution a woman against resuming her duties too early.

DR. T. M. JOHNSON: You asked me to contribute a paper in this bureau; and after I thought it over a little I found I did not know anything, so I decided not to do it, and I refused; and I am going to ask now for a little information. I have thought sometimes that the administration of chloroform tended to prevent the secretion of milk. That is a suspicion that is not borne out by any statistics; but I would like to hear from others upon it. Never having used any morphine, I do not know how it would act; but I should suspect it would act in drying up secretions; and as this discussion goes on, I would like to hear the point discussed which Dr. Johnston brought out, *i. e.*, the immediate reparation of the laceration of the cervix—something I have never done.

DR. THEODORE J. GRAMM: I very frequently use chloroform in the second stage of labor for the purpose of mitigating the excessive pains of the delivery of the head; but in those cases, and in those in which some obstetric operation was necessary—I have seen marked influences from the administration of chloroform as an anaesthetic

I think this is one of the most important papers that have been presented this morning. I think that we could very profitably spend the balance of the morning on this one subject. I would like to say a whole lot; but imagine it would not be anything else than you know already. I think, therefore, that this paper has served an admirable purpose in having reviewed our knowledge of the management of the puerperal state. I certainly agree with the author in believing that this is one of the most responsible duties that falls to the physician—the care of the woman in the after stages of labor.

I was very much impressed with the fact that the doctor said that

she would not tarry over the subject of asepsis—that it was now a very well recognized necessity. I am not getting so very old; but I do remember the time when the subject of asepsis in obstetrics was not given the proper consideration; and one of my friends, while I was ventilating this subject some years ago, seemed to think that it was entirely unnecessary—that in the part of the country where he practiced, it would not be possible to make use of the precautions which I was advocating at that time. I really believe that now, however, we apparently take for granted the necessity for antiseptic precaution; and the obtaining of the state of asepsis is recognized as being a necessity. In other words, I believe that that statement on the part of the doctor marks a point in history. We recognize now its necessity; the time was (and that was very recently) when it was said that our surgery had made its great advancements because of asepsis, by the use of antiseptic measures, and that obstetrics had not made a parallel improvement nor advance. In this connection I might say that the subject of asepsis, rather the antiseptic method—let us not forget, those of us who are doing surgery are largely in obstetrics—that the development of the antiseptic method rests primarily with the obstetrician.

I would like to have Dr. McClelland's paper discussed—the one that was read last night. In this connection I would say that I think Dr. McClelland did us a material favor, particularly the younger men, in calling our attention to the writings of Oliver Wendell Holmes, who is the American representative and the exponent of antiseptic methods; I would call your attention to his writings, and to the fact that we can learn and have it impressed upon our minds in no other way, nor more permanently, nor more fixedly, than to read the history of the subject; and that was a very live subject at the time he was writing.

In this connection I might say that at that time he was opposed by the distinguished autocrat, the leader of the—possibly not self-expressed leader; but he was compelled to enter into a contest, a dispute, with a famous physician. It was Dr. Hodge, of the University of Pennsylvania; and Dr. Hodge criticized Oliver Wendell Holmes by saying that under no circumstances should a physician acknowledge that he can be the bearer of death and ill-health to a patient; and that he thought clinched the argument. Now, of

course, we know that all advance and all knowledge concentrates and is concentrated right in the University of Pennsylvania; and this is a sample of it.

Now, in regard to getting about, some one who discussed this subject was quite correct in suggesting the fact that we should not advise our patients to get up too early. As a matter of fact, it is the one period of their life that some women get of having a rest It is in the experimental stage, this matter of getting up early after abdominal operation and after accouchement; and I do not think that we are in a position yet to advocate that. Moreover, if you will observe the tendency among women you will find that they incline to get up too early; and, of course, to get up too early is to begin their duties, because their duties lie in very close proximity to where they spend the larger part of the day. I think you will have noticed what the mental attitude is as regards her duties, and how she is fixed in her mind upon the tremendous importance of the duties about the household; you have just simply to notice the very foolish dispositions and suggestions that are made by a woman just before she is about to take an anaesthetic, or, indeed, just before her husband goes away to attend the State Society. Consequently, I am in favor, very much, of that attitude which is taken by a recent writer, who has called attention to the fact that the American woman of today is a slave to her household.

In conclusion I want to just say that I rather think the doctor made a slip of the tongue in saying that a three per cent. solution of nitrate of silver should be used in the douche. That would make it about 14.4 gr. to the ounce. I rather think she meant 3 gr. to the ounce, or perhaps some smaller amount.

DR. W. G. DIETZ: As Dr. Gramm and others have said, this is a very important subject; and I second Dr. Gramm's motion that there is sufficient material to discuss this matter for a whole hour. There are some points that I would like to speak on in this matter; and first is hemorrhage. The doctor makes mention of hemorrhage occurring after delivery of the placenta. She speaks of the reliability of homœopathic remedies and in the dependence on the good faith of the sick. There are times, very urgent times, when you have to do something to stanch the flow of blood immediately, and at very short notice. I have seen a very severe hemorrhage stopped

by ipecac in a very short time. I have seen the time when I had to depend on that remedy—my patient would have gone under the sod in a very short time, and I probably would not have attended many more patients in that place. What are you going to do when the blood is pouring out into the room and you turn around and you look after your baby and perhaps you find a cord and at the same time you hear a long-drawn sigh; any experienced man knows what it means. You leave the baby, you see a pale face; the pulse commences to flicker; you raise the feet and lower the head and give her ipecac. Unless you remove everything immediately from the uterus and get immediate contraction, that blood will pour out at such a rate that in a very short time the job will be done and it is all over. If you cannot arrest the blood in any other way, you can at least put your hand back of the body of the uterus and cause acute flexion and hold it there; there can be no escape of blood then. It is just homostasis in a natural way, and will do the work.

As to tamponing after delivery, I think it is an abomination and should not be called on. Even if you pack the uterine cavity with antiseptic gauze, you have a torn body, which does not contribute to the contracatibility of a uterus, and further with all due care, you cannot introduce your gauze (if that is the antiseptic, so-called) without the possibility of introducing septic germs too; but to tampon after labor I think today is deprecated by all practical men—or women, for that matter, too.

As to the getting up of the patient after delivery, I can only agree with what Drs. Chapman and Gramm have said. The longer they remain in bed the better; two weeks is not too long, and if anything too short. The vast majority of women that are to be attended, when they get up, and the question is not the getting up, but getting back to their work; and they get up, and the uterus is twice the normal size at least—I have known it to be three times; and then from being on their feet constantly, and doing their work (heavy, perhaps), sagging of an enlarged organ with weakened supports occurs, and what is the result? You have a natural descent and you have a condition of prolapsus which all after-treatment will not remedy, except in exceptional cases.

So far as the baby is concerned, I did not catch the idea exactly—whether the doctor meant to speak of the care of the baby after

labor when—but the doctor speaks of the baby; if the baby gets pale and you look around—it is all right to look after the lungs and heart, but look after your umbilicus and see that you have no umbilical hemorrhage.

I invariably tie the cord. I say simply this: it is a safeguard, and a good one. It is true that if the circulation in the child is freely established and goes on—in fact, if everything acts normally, we get along without a doctor; Nature will do those things. But does she do those things better than a practical and good man will do? She does not. Nature will very often fall short. By the tying the cord we guard against those dangers; why not do it? I used to use silk, and in several instances I had a slipping of the cord, and never have used silk again. When your child gets pale, see if you have not a hemorrhage in that way.

What I am going to do for the resuscitation of a child more or less asphyxiated when it enters the world—shall I wipe my mouth and blow into the child's mouth? Ten to fifteen years ago I saw a method advocated I have tried repeatedly, and practically have never known it wanting; that is, to take the child apparently breathless with two feet in between my fingers and hold there very tight and in fact wrapping a cloth around to prevent slipping. I take my left hand under the shoulders and let the child down and bring it up in an elliptical motion several times; and if you will do that, in nine cases out of ten—in ninety-nine out of a hundred—if there is any life there that child will come to. Empty the lungs of any mucus and residuary air; there is no residuary air by this motion, you stimulate the heart and bring the child into activity.

The doctor does not specify whether she uses chloroform, or anything else. But I have used chloroform and in several cases I have seen hemorrhages follow its use whether due to it or not; but it has happened. Is it merely a coincidence, or what?

DR. W. C. MERCER: I did not understand whether any one answered the question about the repair of the cervix after delivery. Unless there is diffuse hemorrhage and the uterus is contracted, I would examine the cervix, barring any extensive tear in the perineum. There are some at the present time advocating repairing the cervix right after delivery, if there is not any laceration, if there is not any bleeding and asepsis, and antisepsis has been

carried out as soon as possible. The uterus in contracting, and the cervix in contracting, cause many of the tears to repair themselves; because the uterus in contracting brings the edges together so that in examining the case afterward you find there is apparently no scar at all in the cervix; so that unless there is profuse bleeding or great laceration of the cervix, it can be left alone; because there is only one danger, and that danger is of carrying infection.

I would like to ask the question—Dr. Johnston said something about using a pessary when a woman gets out of bed. I did not understand whether the pessary was used for the retroversion that is found when the patient begins to get around. After the delivery of the placenta or, even we might say after the delivery of the child, you will find the uterus will contract down halfway, and even further down, and then relax and extend up to the umbilicus, and after delivery of the placenta it will come down lower still; and if you examine the uterus—the next day you will find the uterus sometimes above the umbilicus; and then, after that, the involution will go on continuously.

Dr. Johnston said something about if part of the placenta were retained; but I did not understand whether she examined the placenta or not. It is important at the time of the delivery of the placenta, that the doctor examine it, and take the time to examine it thoroughly; and if anything in the way of trouble turns up afterwards, you absolutely know that the placenta was intact, so that you do not need to go into the uterus.

Then about laying the child on the right side. I do not know that I ever paid any particular attention to laying the child on the right side; and I do not know that I have seen any bad results by not doing so in failure of the closing of the valve.

DR. EDWARD CRANCH: There was something said about tying the cord. I will give my experience: I have never seen a cord bleed yet, unless there was syphilis in the case. It does not make any difference if the syphilis is apparent or not, because you are still liable to get hemorrhage from the navel cord of the child. Look out for your cord when you have syphilis.

DR. R. W. McCLELLAND: I think we would not be justified in not tying the cord in every instance; and, in fact, I know, when

the case is brought up before the courts (as I have seen records of cases,) that it is a very damaging point against the physician if the cord has not been tied. I know that brother Dr. J. H. said that forty-two years ago he tried this process (which was rather new then) of not tying the cord; and he lost—or very nearly lost—several cases; and he quit.

We should all bear in mind the matter of tying the cord. Do not wait for the pulsation to cease. If in a very weak, tender infant in a moribund condition after delivery the physician puts his finger on the cord, he will still find pulsations going on there; the longer they keep on, the chances are the less chance that child has to live. The circulation perhaps is going on away from the child instead of in the other direction; the child is losing blood; so that you must take that into account. In a very strong child, that would not be necessary.

Getting up soon, I think is a mistake. We ought to remember that the normal cycle of the woman is thirty days; and she ought not to be allowed to go around to any extent, or off one floor, in less than thirty days, for that reason particularly; and then again, finally, we ought to remember that we ought not to make this a burdensome process. What is ordinarily a natural and normal process, we ought not to make too much of a burden for the family. Out our way there are physicians who are going through the most elaborate processes, even in the most ordinary cases. I recall one in which the walls of the room were scraped and crash put over the floor and the patient placed on an iron operating table as if she was to be put through a laparotomy. We ought not to go to the other extreme, either. Some old Jersey doctor, who had been practicing fifty years, said he did not use antiseptic silk to tie the cord; and he said in fact, in many of these cases around the neighborhood where he had been attending, where they didn't even have a bit of string about, he has even had to take a shoestring out of his shoe; "and, furthermore," he said, "Some of these younger men around here crease their pants; I don't propose to crease my pants." We want to take the happy middle ground between those two.

DR. W. A. SEIBERT: The discussion leads me to the supposition that an error—at least, as it appears to me—is being made; and it is with reference to the tying of the cord. I do not think

that when you have a blue baby, (that is, at a tedious labor,) that the cord should be tied immediately. I believe the cord should not be severed, and I believe that the blood should be allowed to move and this is for the good of the baby later on—personally, individually, later on in life. I believe that a great deal of stupidity (and I have gone over my cases a period of twenty-five years, now, to look this particular matter up and it has seemed sufficiently important to me to tell you)—I do not believe that it is proper to tie that cord so soon when you have a slow labor; the future of the child will be stupid if you do so. The stupid children, those who have been peculiar and have had eccentricities, have had slow labors and the cord has been tied early; and I believe if you relieve some of that pressure, but do not tie that cord—watch it. I tie all of my cords; but I draw attention to that point, and that the cord may be tied too soon. I am referring to the cyanosis and slow labor, where there is blood pressure.

DR. S. W. S. DINSMORE: We were always directed to tie the cord in two places—cut in between; and the idea is to get rid of the navel cord as soon as possible; and I never follow that procedure. I tie the cord tight and then strip the blood down from the abdomen of the child, and then get it and tie it up without any blood in it. I firmly believe that in five years from now the idea that a well woman has to lie in bed from two weeks to a month to have a baby, will have all passed away. The healthy American woman is a new article to what we formerly dealt with; and I do not think that she has to lie in bed a month.

DR. N. L. LANE: I think we ought to be very careful about advocating too early a getting up; and it is most likely that this gentleman quoted by the author of the paper had absolute control of the patients; when he said they could get up, he did not mean they could walk around and go to work, but merely could sit in the chair; and I believe that is the same thing as lying in bed, and possibly just as well. You get better drainage, you get just as much rest; but the trouble is, you can not control your patients; if you let them out of bed, they go to work.

DR. ANNA JOHNSTON: With reference to the question Doctor puts about the anesthetic, in the first place, as someone said, I did not mention it. I generally use the chloroform unless con-

traindicated. First, it does prevent a woman from suffering a good deal of pain; second, in using it in the second stage you do prevent severe lacerations. The woman is not liable to bear down so heavy in those last pains, consequently you are not going to have as severe a laceration as you otherwise might have. Then about the pessary, I said in a relaxed condition of the uterus. Of course I do not use it if there is any indication of retroversion, or any thing of that sort, or if the uterus is very much relaxed.

In regard to the point that Dr. Lane made about getting up, of course I did not mean that they were to get up and go to work; but that they were not to lie in bed, as lying in bed too long and keeping her mind on herself, makes her think that she is an invalid; consequently, if you can keep her mind off herself and not allow her to stay in bed too long, she is a great deal better.

OCCIPITO POSTERIOR POSITIONS.

W. C. MERCER, M. D., PHILADELPHIA.

This subject and these positions are very important to every physician who does obstetrical work.

It is not my intention to write a lengthy paper, but to refresh your memory with these important positions and their management during labor.

So as to thoroughly understand the mechanism the head goes through in posterior positions, I must go back to some observed facts or truths.

According to some authorities we have what is spoken of as two positions, the first and second, *i. e.*, the inlet or any plane from the inlet to the outlet is divided into two parts or halves, the left and right. Others have the planes divided into four, making four quadrants of the bony birth canal.

The former division makes only two positions of this canal, the first and second. The left position is when we find the occiput in any part of the left side of the pelvis. In the right position the occiput occupies any part of the right side of the pelvis.

When we divide the pelvic canal into four quadrants we have,

when the occiput lies anteriorly to the left, the first or position L. O. A.

Anteriorly to the right, the second position, or R. O. P.

Posteriorly to the right, the third or position R. O. P.

Posteriorly to the left, the fourth or position L. O. P.

Then we have two anterior positions and two posterior positions. About 80 per cent occur in the anterior positions and 20 per cent. in the posterior positions. These figures vary according to different authors.

The head must go through a certain mechanism for the foetus to be born, and going through this mechanism the smallest diameters of the head are engaged, and to do this the head must be normally flexed.

This makes the bi-parietal and sub-occipito bregmatic diameters engage, the smallest you can get.

It makes no difference whether we have the 2 or the 4 positions, we must thoroughly understand the mechanism of each.

In anterior positions the occiput rotates through an arc of less than 90° to come directly under the pubic arch, while in posterior positions it is one of more than 90° and may run up to almost 180°.

As I stated before, we have 20 to 21 occurring as posterior position. This we can divide between the sides in 17 per cent. to the right and 3 to 4 per cent. to the left. The right positions are the more frequent of the two on account of the rectum filling up the left side of the pelvis.

According to this, then, we have one posterior position occurring to four anterior. Yet, it is not all the posterior positions that give us trouble, it is only an occasional one, this makes the percentage small.

Why is it that our posterior positions are looked at with such dread? Sometimes you hear a man say I am afraid of posterior positions. Let us investigate. In the first place, do we understand the mechanism? If so; we may have forgotten it, or probably discarded it, thinking it of little use. Let us read over our text books on this subject, and you will find that the authors say little about it except to picture it as a very dangerous position. Such is the teaching the man received while in college and how can he think otherwise. Will his experience disprove it? Is it an actual

fact? Has our experience proved the posterior position to be very dangerous? I think the most of us can recall such an experience. Was it the posterior position that was so dangerous, or is it the inefficiency of the physician, or on account of the slow progress that is made in the dangerous ones, that he gets impatient, or does the family work on his sympathy or demand interference.

You may have some other patients in need of your immediate service. If it is the difficult one, you may have time to answer the call if none of the danger signals are out. You are master of the situation and should know when interference is called for and not allow outside advice to influence you, unless it is professional. If you are engaged to attend the case and have visited it, it is up to you to give it your undivided attention.

If you could go over your records I think you will find that forceps were used in a very small percentage of your posterior positions and such has been my own observation both in hospital and private practice.

We would expect labor in occipito-posterior positions to be longer and more tedious than anterior ones. In posterior positions the occiput has to traverse a greater arc, which we would expect to require more time and cause more severe pains to make the occiput rotate under the arch.

Time is a great factor and will accomplish much if the conditions of both patients will stand it. Time and pains cause considerable moulding of the head, and many times it is surprising the amount of moulding that will take place and without any apparent injury to the brain of the child.

I think, if we will make closer observation, we will find that very few of our posterior positions are really serious cases and these only when we have some pelvic deformity, or a very large head, or where the head fits the pelvic canal tightly, and if the head be a medium sized one in a large pelvis, there is not enough resistance offered to the head to cause it to rotate.

A poorly flexed head, or, in other words, a head midway between flexion and extension is very apt to occur in posterior positions. This causes the occipito frontal diameter to engage, it being a longer diameter than the sub-occipito bregmatic, which should en-

gage normally. You know what the longer diameter will mean to labor.

Here we may give them assistance which will materially shorten some cases. First, we have postural version. To do this we put the patient on her side corresponding to the side on which the occiput is, as by so doing the force is exerted down the spine of the child, causing flexion of the head, and aids rotation and flexion. Sometimes you can assist this rotation with your fingers by making pressure anteriorly. Many times I have seen these manipulations work wonders in shortening labor. Of course, the occiput does not rotate until dilitation is complete or until the head has descended into the cavity of the pelvis.

There are many causes that may prevent the head from rotating. Some of the most common are any type of pelvic deformities, but these deformities being mild; and rigid conditions of the maternal soft parts. These conditions occur very frequently, so it will suffice to mention them alone as it would make a long story to enter into a description of all the causes that interfere with rotation.

We have certain definite indications for interference, and no physician is justified in interfering until he has them. What are they? They are innumerable, but can be summed up under three, they are danger to the life of the mother, danger to the life of the foetus, and uterine inertia.

They can be recognized by the pulse and temperature of the mother, by the foetal heart decreasing to one hundred beats per minute. Uterine inertia is recognized by the decreasing of the frequency and severity of the uterine contractions after some hours of active labor.

It has been quoted several times that modern obstertics and the modern doctor require that the patient shall not be allowed to suffer, but that requires immediate delivery. If immediate delivery is to be brought about there is only one way of doing it, and that is by forceps; if forceps, that means more rapid delivery. This is followed by a greater number of lacerations, which may mean invalidism for life and loss of the baby, too. You may say, that will occur anyhow, so it may, but not always nor as frequently. Some advise rotation of the occiput anterior by external manipulation in the early part of the first stage. It can be accomplished if

any benefit can be gained from it, but it is hard to do and many times impossible.

If the forceps are required in these positions, we have two applications to select from.

Scanzoni's Manuvery and the cephalic application. Some consider them one and same thing, but they are not. The Scanzoni is a double application, while the cephalic one is only a single one. (Here the doctor illustrated them.)

To a certain extent the physician must have some practice or he will do a lot of damage to the maternal soft parts and in the meantime his technic must be perfect or infection will follow. To impress this I might quote Dr. Lee, of Chicago, who says: "How long will it be before the profession recognizes that the proper conduct of an ordinary labor case, mind you, an ordinary one, requires an enormous amount of learning, acute powers of observation and great technical skill?" How about the difficult ones?

Then to conclude, I wish to make this plea. That we each thoroughly understand the mechanism of labor. Study it in each individual case, and when the call comes for interference in whatever way it may, that we use our armamentarium to the best advantage, following the normal mechanism, and by so doing relieve the suffering of our patient and save life at the same time.

THE APPLICATION OF HOMŒOPATHIC REMEDIES IN OBSTETRIC PRACTICE.

C. S. MIDDLETON, M. D., PHILADELPHIA.

The object of this paper is not to be exhaustive, but to boldly claim that in some conditions accompanying pregnancy, and in others appearing in parturition, the use of correctly applied homœopathic remedies has often brought relief to the patient to be obtained by no other means, smoothed her pathway, and made her burden less hard to bear.

To one who has treated a large number of cases in this branch of medicine in his experience of nearly forty-eight years of practice, and who has an abiding faith in homœopathy, which faith, it may be said, has grown stronger with the lapse of time, and who, as

a member of the Homœopathic Board of Medical Examiners from its organization, has had an abundant opportunity of passing judgment on this subject, having been examiner of obstetrics for years, the fact has been forced upon him, that, for some reason, homœopathy does not now receive just appreciation of its worth in this practice, too much attention apparently being given to materialism alone.

Notwithstanding it was the invariable custom to announce to the class, that, wherever treatment was asked for, homœopathic treatment was especially to be given, no matter what other adjuvants were advised, it required a very cursory observation alone, to note the paucity of attention given to homœopathic prescriptions, even where the indications for such remedies were clearly in evidence.

With this, to me deplorable, fact in mind and my opinion being fortified by contact with some younger practitioners of the past few years, must suffice as an apology, if apology be needed, for the appearance of this paper. Let it be understood that the writer does not decry the application of any and all adjuvants, surgical or otherwise, when needed, but he pleads for homœopathic remedies in all cases where medicinal treatment is required.

In comparison with the practice of the dominant school in this branch of medicine, where most of the various derangements of pregnancy are attributed to autotoxæmia of some kind or nature, and where the treatment for relief is decided upon through these theoretical grounds, either merely analgesic, sedative, purgative, antacid, or germ destroying, it seems to those who have had the opportunity of demonstrating the superiority of the homœopathic therapy in the subject under consideration, to fall very far short of rendering the service required, which homœopaths have demonstrated in pregnancy; and no less during the process of labor have homœopathic remedies rendered brilliant service, saving much time, suffering and perhaps death, of the infant or mother.

In obstetrical practice the trouble begins, if at all, at the onset of pregnancy, with vomiting; and for this condition, aside from dietetic and hygienic suggestions, Ipecac will usually be found of service and often correct the abnormality, when there is continual nausea; vomiting of all contents of the stomach, undigested and in large quantities; mucous and bilious material; tongue coated

whitish; desire for certain foods and sweets; or disgust for all foods; sometimes diarrhoea of mucous, greenish substances, some colic and straining; stomach relaxed; breath offensive; sleepy after vomiting; symptoms worse from stooping.

Nux vom.: nausea and vomiting; worse in the morning; belching; bitter and sour taste; eructations; water-brash; weight and heaviness at pit of stomach; constipation; hemorrhoids; nervousness; irritability; depression; tobacco and other odors offensive; restless sleep, particularly after three a. m.; desire for stimulants, but worse for indulgence in alcoholic liquors.

Arsenic. alb.: as arsenic acts upon almost every organ, tissue and secretion of the system, producing great prostration and exhaustion of the vital forces, long lasting in its action, it becomes a grand remedy for so-called pernicious vomiting of pregnancy, which, in some instances, may be due to autotoxæmia. The tongue may be furred on the sides, with red streaks down centre, or may be very red all over and dry, with great thirst, wanting to drink cold water very often, but satisfied with but little at a time.

Vomiting is excited by eating or drinking; vomiting caused by eating fruits; ice cream; great distress in epigastric region; intense burning in stomach and abdomen; loathing of all foods; great emaciation; skin dry, face pale, deathlike, sunken; great mental anxiety; dread of death; restless, worse after midnight (1 to 3 a. m.); diarrhoea, thin, watery, yellowish, very offensive or blackish stools; greenish and mucous.

Phosphorus: being also a remedy of destructive action, may be of vast use in pernicious vomiting, where the blood seems to have undergone degeneration (toxæmia.) Sometimes there may be ravenous hunger, or loss of appetite; thirst; water is vomited as soon as it becomes warm in the stomach; food regurgitates, sometimes in mouthfuls; longing for acids and refreshing drinks and foods; vomiting of blood, bile and mucus; pain in the stomach; pain in, and rapid decay of teeth, and perhaps of the maxilla.

Fer. phos.: a good recuperator. Vomiting of undigested food; suddenly leaves the table, with one effort vomits the food, then can sit down and eat again; vomiting of bright red blood.

Pulsatilla: we must regard Pulsatilla as one of the most useful remedies in pregnancy, parturition and post-partum conditions. In

vomiting of pregnancy the indications are to be traced to disordered stomach, the result of errors in diet, accompanied by reflex irritation from the uterine plexus, through the cerebro spinal system rather than through any degenerative, inflammatory or toxic process.

The patient is usually of the mild type of disposition; weeps easily; inclined to be despondent; hypochondriacal; out of sorts with everything; peevish and capricious, though not vexed; discontented; fretful; better in the open air; tongue coated whitish or dirty looking; desire for food, but undecided as to what kind; aversion to rich or greasy food; eructations after eating, tasting or smelling of the food, bitter, bilious, rancid, sour, putrid; stomach disordered by fat food and pastry; nausea; disagreeable rising after eating or drinking; water-brash; morning nausea; vomiting after each meal, of bilious matter and of food eaten long before; gnawing distress in stomach as from hunger; pain in stomach an hour after eating; accummulation of sweetish saliva in mouth; taste like putrid meat, in morning, with inclination to vomit; food, especially bread, tastes bitter; very offensive odor from the mouth; *toothache*, worse evening and night and by warmth of bed. Pulsatilla is often useful in allaying the pains in threatened abortion; reflex convulsions.

Another most distressing condition during pregnancy, is that of Ptyalism, possibly from auto-tavæmia. Mercurius seems to be the logical remedy, but salivation is not always relieved. There may be excessive hunger; vomiting; putrid odor from mouth; and ulcers of the mucous membrane; toothache; decaying teeth become loose and fall out; necrosis of maxilla; gums spongy, receding from the teeth; tongue large, coated whitish; impress of teeth on edges; syphilitic subjects.

During the period of pregnancy there are many times when Belladonna may be required for general throbbing or frontal headache; congestion of head; excited, irritable, scolding temper; even convulsions; threatened abortion; bearing down pains; discharge of bright red blood.

Hyoscyamus; excitable; aberration of mind; sees images; muttering delirium; wants to run away; convulsions.

Stramonium: talking continuously; stammering; delirious; convulsions.

Ignatia: variable disposition; mental depression; grief, constipation; headache as of a nail pressing into the head.

Nux vom.: irascible; stubborn; overbearing; aggravated by use of alcohol, wines, beer; convulsions from excitement and irritation, but not unconscious.

Moschus: hysterical and high state or nervousness.

Asafœtida: nervous anxiety.

Chamomilla: nervous, fretty, childish, pettish; diarrhoea, very offensive, like spoiled eggs; yellowish and watery; greenish.

Aconite; fever; excitement; restlessness; fear of death; threatened miscarriage from fear or fright; discharge of bright blood.

Caulophyllum: uterine pains, bearing down; threatened abortion; false pains; passive hemorrhage.

Cimicifuga: great depression; melancholy; sensation as if a cloud were hanging over one; uterine pains, running *across* pelvic region.

Aconite: fever; excitement; restlessness; fear of death; theatened miscarriage from fear or fright; discharge of bright blood.

Gelsemium: congestion of head; head feels heavy; wants to lie down to rest it; sleep disturbed by mental activity; thoughts flying rapidly from one subject to another, preventing falling asleep; glimmering before the eyes.

Arsen alb. and apis mel. are useful for swelling of the feet and limbs and in albuminuria.

Cup. ars.: nephritis; albuminuria; diminished excretion of urea and other solids; tube casts; convulsions.

Merc. corros.: nephritis; albumen; degeneration of kidneys; tube casts, hyaline and granular.

LABOR

Belladonna is a most useful and indeed indispensable remedy during labor, when the os is rigid and unyielding; the patient is tormented by pains coming and going quickly; cutting, bearing down, in the first stage and, as the patient will say, "doing no good;" the patient excited and uncontrollable; head and face hot and red; spasms may intervene.

Cimicifuga is often useful for pains running crosswise; mental state one of despondency; gloomy.

Caulophyllum tincture: excellent for inefficient pains in second stage of labor.

Chamomilla: patient nervous; childish resistance to the necessary fortitude to endure the pains.

Pulsatilla: pains are irregular; flying about from place to place; down the limbs, instead of in the back and uterine region; specific for false labor pains; patient weeping. Pulsatilla has controlled convulsions in pregnant women, both before and during labor, when caused by reflex irritation.

Ignatia will often relieve the irritable, versatile patient; changing quickly, from jesting and laughter, to sadness and tears; grief-stricken patients.

Bell., caul., puls., and secale cor. are of service in delayed detachment of the placenta, but the alert accoucheur will not expect to await an opportunity to apply them.

Passive hemorrhage, ante-partum, where *Placenta Praevia* is not present, is often corrected by homœopathic remedies and the threatened abortion ended.

Belladonna: characteristic pains and condition, bright red, hot blood.

Ipecac: constant flow red blood; nausea; collapse.

Sabina: dark blood and small clots.

Crocus: dark blood, stringy clots.

Trillium: profuse flow, dark clotted; history of previous hemorrhages.

Hamamelis: dark blood; want of tonicity of venous coats.

Caulophyllum: passive hemorrhage; want of tonicity of muscular fiber of uterus.

Erigeron canad.: constant passive or active flow in "bleeders."

Post-partum hemorrhage requires more active measures according to conditions causing the flow, but aside from correction of certain physical, or other causes, the usual remedies are often indispensable.

Arnica administered at the termination of labor relieves the general soreness of the patient, also that of the uterine muscles and often relieves the distressing after-pains.

Caulophyllum is useful in grinding unbearable after-pains.

Belladonna: bearing down pains, coming and going quickly; soreness; headache; feverish; too much lochia, bright red, also, suppression of lochia.

Acon.: fever; soreness; bright flow; suppressed lochia.

Chamomilla: irritating pain; patient fretful, cross, childish.

Puls.: changeable pains, first in back, then running down thighs (inside) to knees; mild temperament.

Cup. met.: serviceable in crampy, spasmodic pains.

Aconite, belladonna, phytolacca, bry. alb. will generally control inflammation of the mamma in its initial stage, although probably caused by infection from cracked nipples; if caused in this way, special antiseptic attention must be given to it.

Hep. sulph., in the higher potency, is recommended to prevent suppuration; in the lower trituration, to hasten the formation of pus.

Silicia, echinacea, mercurius, are also valuable in treating abscess, both before and after evacuation of the pus.

Arsen. alb., carbolic acid, echinacea, mercurius, silicia, belladonna, applied according to their indications, are useful medicines in puerperal or septicaemic fevers.

THE DIAGNOSIS OF PREGNANCY.

R. L. PERKINS, M. D., HARRISBURG.

In making a diagnosis of pregnancy the physician often has a difficult problem to confront. The honor of a woman may be at stake or the social position of a family; and last, but not least, the reputation of the physician may depend on the correctness of his diagnosis, for should he err, especially if young in the profession, it may take years to establish himself as an obstetrician.

The fact of marriage has much to do with the forming of an opinion, but opinions do not make a diagnosis. The woman may have the fact so firmly fixed in her mind that she is pregnant that it will lead us to err in judgment.

Some of the best men in the profession, surgeons and gynecologists of repute, have performed operations for the removal of a pathological growth only to find a gravid uterus. On the other

hand, single women have been told by their physician that they were pregnant, and later their condition was found to be a fibroid or a cystic ovary.

Phantom pregnancy may occasionally engage our attention. We may find here many of the presumptive signs, as cessation of menstruation, morning sickness, and enlargement of the mammary glands.

The patient often fails to consult her physician until the idea of pregnancy is so firmly fixed in her mind that it may necessitate considerable thought on his part to be willing to state an opinion.

The legal side of the question—an unmarried woman has been imprudent and fears herself pregnant, brings suit against some one whom she presumes to be the father of her unborn child. The magistrate will order her to consult a physician, and he must appear in court to testify as to her condition, and it is necessary for him to make a diagnosis in order to do this.

The presumptive signs of pregnancy are those signs that can be obtained previous to quickening, the positive those after this time. Each presumptive sign in itself means but little, but grouped form strong evidence.

Suppression of menstruation may be caused by other means, as climatic changes, anemia, mental influences, taking cold. Fear of becoming pregnant, especially if she has been exposed, will frequently cause amenorrhea. Girls may become pregnant before puberty, and women after the menapause. Pregnancy may occur during the amenorrhea of lactation, menstruation may occur during the first few months of pregnancy.

Morning sickness is a valuable early sign and may occur immediately after conception before the cessation of menstruation, but similar conditions are possible in certain stomach troubles.

Breast changes, such as enlargement, prominent nipples, dark areola, prominence of Montgomery's follicles, are signs that have certain value.

Discoloration of the vagina and vaginal pulsation may assist, but absence of these does not prove a negative condition.

All these signs are valuable in the diagnosis of extra-uterine pregnancy. Softening of the lower uterine segment is a valu-

able prognostic sign which is found in very few other conditions.

During the first three months an absolute diagnosis is sometimes very difficult, but if we should find the two most important clues, suppression of menstruation and nausea and vomiting, then the four soft signs should be looked for, softened cervix, softened lower uterine segment, soft and boggy uterus, and softened and enlarged mammae. If these should be present, a diagnosis could in safety be made.

An early sign which has proven very valuable to me has been the altered disposition. A woman with naturally a happy, cheerful mind, who does not allow petty annoyances to disturb her mental equilibrium, should her disposition suddenly change with cessation of menstruation, should she be gloomy and fretful, and be disturbed by trivial things, it might be considered a valuable presumptive sign.

We should not wait for the positive signs to make our diagnosis, nor be too easily led astray by the opinion of others.

A great many times the physician does not make a thorough physical examination, for fear of offending the patient, but still his reputation may depend on his diagnosis. If we cannot be thoroughly satisfied that the uterus is gravid, tell the patient that it is still too early for a diagnosis, and ask her to wait. It is very embarrassing to make a positive statement, and then be compelled to retract.

These cases that have been under my observation may be of interest to illustrate some points:

Mrs. C., age 30, previous health fair; history of abortion two years ago. Had given symptoms for some time calling for a curettement, which was performed in May, 1908. Health much improved. We did not see the patient again until October, when she claimed to be pregnant, as she had not menstruated since July. She had nearly all the classical symptoms of pregnancy, but frequent signs of blood made us withhold a diagnosis. In November she claimed to experience quickening, but we were never able to make out the fetal movements. During the second trimester she suffered from menorrhagia, which responded readily to treatment. We were unable to make a thorough physical examination, as the uterus and adenexa were extremely sensitive.

The abdomen did not show progressive enlargement as it should. At no time were we able to make out foetal movements or foetal heart beats. Lack of these signs made us suspicious. In January the patient complained of much pain and hemorrhage, which made us fear, if her condition was pregnancy, a premature birth. These attacks continued during February, but were less severe. Early in April patient complained of severe bearing down pains, with no sign of blood. According to her reckoning, this was the time for the delivery of the child, but frequent examination showed no dilatation, the uterus seemed large and firm. These pains continued for ten days, lasting several hours each day. During the last five days a gradual increasing temperature made us think it wise for patinent to be removed to the hospital. On the 26th, under anesthesia, the uterus was found to be normal in size, with a tumor posterior. On opening the abdomen, a walled off pelvic abscess was found, involving tube and ovary of the left side, containing about twelve ounces of pus. Both tubes and ovaries were found to be in such a degenerated condition that it was necessary to sacrifice them. Was this pelvic abscess a degenerated extra uterine pregnancy? We think so, or how else could the symptoms of pregnancy be accounted for.

Mrs. O., age 44, mother of five children. Menses had been scanty and irregular for past year, at last ceasing altogether, complained of vague symptoms, morning sickness, and perverted taste. After three months a physical examination elicited softened cervix, boggy uterus and vaginal pulsation. The family was very anxious to know her exact condition, so a diagnosis of pregnancy was given, which was not well credited. One evening a call was received, saying that the patient was suffering considerable pain and bleeding profusely. On arrival the anxious husband produced what he supposed to be a tumor that had just been expelled. On examination it was found to be a four months fetus, with placenta and membranes complete. In this case it is fair to presume that the menopause had been well under way for the past year, and that menstruation had almost ceased. I might add that the patient has not menstruated since.

These two cases, in some measure, illustrate the difficulties in diagnosis, with which the physician is obliged to contend.

In the first case there were some signs of pregnancy, the patient considered herself so, we were unable to make a thorough physical examination, without an anaesthetic, to which the patient objected.

There was no history of an attack of severe abdominal pain, with the classical signs of collapse, which we are taught is a pathognomonic symptom of rupture in tubal pregnancy.

In the second case the symptoms pointed to the menopause, with the exception of the morning sickness, but the physical examination here proved to us her condition, and on this a diagnosis was made.

The diagnosis is often obscured by the patient, intentionally and otherwise, as in the case of an unmarried woman who has been indiscreet, and who is alarmed by the absence of her menses, but still hopes that it may be due to other causes than impregnation. When questioned she denies intimacy and hides the other symptoms or attributes them to other causes, so that it may be necessary to make the diagnosis wholly on the physical examination.

On the other hand, a married woman has missed her period and at once considers herself pregnant; she will mislead the physician, as every disturbance will strengthen her belief in her supposition of pregnancy.

In such cases, when the signs are obscured or magnified, a physical examination will be the only sure method and must be insisted on, otherwise we may be chagrined later in having the patient say that we are indirectly responsible for the trouble and expense incident to the preparation of a useless layette.

DISCUSSION.

DR. S. W. S. DINSMORE: This is a very interesting subject to the general practitioner; and in a paper of the length of that just read it is impossible to go over all the ground. There is one sign the doctor did not mention which one frequently has use for, and that is Hegar's. There is no doubt but that it has a certain place and is useful. The diagnosis of early pregnancy is very much like the diagnosis of any disease; one symptom alone is not sufficient upon which to make a diagnosis; but as you get

many and you see they all point in the same direction, they will help you out very greatly.

Nausea is one of the symptoms least to be relied upon. I have known many women who went along, having half a dozen children, who had no nausea at the time of the pregnancy. In others who were not pregnant the nausea came from some other source. The statement of the patient is frequently (unless they have something at stake) most misleading. And it is very easy for us to color our side. Wherever a physician has been so unfortunate as to get up and have a good sharp attorney make you give reasons for your symptoms, he is apt to get into deep water, for one of the most difficult things to prove in the world is pregnancy before quickening. Still, I wish to call attention to the Hegar sign because the fetus of two and a half to three months will give you that peculiar evidence when you press up on it that an empty uterus will not give. It is always well to use it before we make up our diagnosis.

DR. THEODORE J. GRAMM: It certainly is a source of considerable surprise on the part of men who are not engaged in operations—particularly abdominal operations—to know that distinguished operators are constantly making the mistake of failing to recognize pregnancy. Only within a very few weeks I learned of such an occurrence in my own town, where a man of considerable experience, and perhaps international reputation, had made the mistake of diagnosing a tumor, when the woman was pregnant. Of course, she had a tumor, in so far that any growth was a tumor; and in this instance the child was the tumor.

Now, the question arises as to why such a thing can happen; and I do not propose to go over the relative value of all the signs of pregnancy, nor just when they are earliest seen; but I want to make one suggestion, and that is this: it seems to me that every operator should have distinctly before his mind prior to doing an abdominal operation the question as to whether this woman might not be pregnant. And the question ought to present itself just in that way. In other words, not to do an abdominal operation before determining that the woman is not pregnant. It is like everything else; diagnosis is not the or-

derly—is not usually the orderly exclusion and elimination of certain symptoms and then coming to a result as to the condition present in a given case. We teach our students that; and yet every one knows that when a disease is encountered that comes within the scope of that subject which most interests the physician, he is very apt to make a so-called snap diagnosis. There are, for example, many doing eye work who doubtless find it scarcely necessary to look at an eye twice before recognizing some of the most usually recognizable conditions that are found there; and in that way do not go over a regular process of mental reasoning as to what this is; and so I think operators in this case ought not to do this which is so commonly done in general practice, but they should have in mind the fact that a woman is a human being who is apt to become pregnant, and to exclude that fact before operating.

I think, too, that the general practitioner, and those who are not associated with obstetric work in institutions, ought to practice the subject of the diagnosis of pregnancy. It is an exceedingly easy thing to do; and in the course of an examination of every case you will have that one question in mind; you can very readily find that it is possible to recognize these signs and these early signs, and to practice recognizing them in every case. Take, for example, the discoloration of the vagina and of the vulva—one of the most reliable signs of pregnancy, because indicating that there is a congestion in the lower part of the pelvis. This congestion is very different from an inflammation: it is not at all like a gonorrheal inflammation—it is absolutely different, and very easily recognized. In some instances where this question has come before me, I have been able to recognize that instantly on the first view of the external genitalia, if the sign is present.

DR. W. G. DIETZ: Speaking of the signs of pregnancy, like a good many other things, it is not difficult to diagnose pregnancy in normal cases. The sensation conveyed by the os to the examining finger (the peculiar softening of the cervical surface) has been compared to the soft end of the nose, and it certainly conveys that sensation; but aside from that, the peculiar bulging of the anterior inferior segment of the uterine body, which al-

ways goes hand in hand with the very early signs of pregnancy, commences about the time that the softening process of the cervix begins. This, in conjunction with the beginning of the softening, is a very reliable sign (so far as anything can be) of pregnancy, and is practically not imitated by any other physiological or pathological process.

As to what the conditions of the cervix were in the first case that the diagnosis should have been so difficult does not appear from the report. Within the last few years there have appeared articles in medical journals mentioning a sign (the so-called Moses sign), which I have not heard mentioned. That is, the change in the pulse and pupils in the first two months. When you have a pulse 90 to 100, with a dilated pupil, in the absense of other pathological conditions and in the absence of all febrile movement, and cessation of mestruation, it is a very strong presumption in favor of pregnancy. I know the symptom is not mentioned in works on obstetrics, having only been observed within the last few years; and I certainly have corroborated it in fully one-half of the cases which I examined for the presence of these peculiar symptoms. The discoloration around the nipple is more to be relied upon than the absense or presence of morning sickness; but with blondes it is rarely very marked; still, the latter sign, in conjunction with dilatation of the pupils and the pulse rate of 90 to 100, are certainly suspicious signs of pregnancy.

DR. R. W. McCLELLAND. There is one other sign that has not been touched on—hypertrichosis—an exuberance of the growth of hair, not only on the body, but generally over the body. I have seen a report of fifty cases in which that sign has been corroborated. I will mention one case that came some time ago for an operation for abdominal tumor; and I suggested to her the possibility of pregnancy. I said: "Have you not ever thought of the possibility of being pregnant?" She laughed, and said: "Do you know how old I am?" I said: "No, I do not know. I should think you were getting along towards 35." She said: "I am 49 years old; we have been married for 22 years and I have never been that way once—have not been that way yet." I said: "Well, let us wait, and see how this thing

will turn out. You don't need to rush onto an operating table." And that woman waited, and was delivered of a fine healthy child at due term, and very much pleased at that.

DR. N. L. LANE: The subjective symptoms of pregnancy are absolutely not to be depended upon in the patient. You know that we have cases of pseudo-cyesis that most physicians laugh at; but they do occur. Within one month at the Hahnemann Hospital Dispensary, Dr. John E. James, Jr., had two of them. Most of us laughed at him when he told us; but on investigation they proved to be typical cases. They had all the symptoms of pregnancy; they had a large abdomen; and the woman said her abdomen was getting larger, and the physical signs seen throughout of pregnancy, but the uterus was small, it was normal. I think most of us do not have trouble in making a diagnosis of a normal pregnancy. It is where we have complications. I do not think that surgeons have opened an abdomen in a case of uncomplicated pregnancy. It is where we have fibroids, or cysts, or something complicating the case and confusing it. Mistakes of that sort are made.

I wish the doctor had given us the physical signs of his first case—whether the uterus were enlarged, whether the cervix was softened; because those are the symptoms that we must depend upon.

In regard to the second case, it seems to me that he would have found blood or something, even had an abscess formed; that if the abcess was a recent formation fever and chills should have began previous or soon before the operation, but he certainly should have found some remains of the products of gestation.

DR. W. C. MERCER: About the presumptive signs of pregnancy, no doubt any one of them does not amount to anything; and sometimes all of them do not. A patient was sent to me, who was about 38 or 39, and who was very anxious to have a child, and who had made all the preparations. She had all the signs of pregnancy, and in due time began to have pain, with some bleeding; and she was sure that the time had arrived, as that was the time that she had calculated upon for her confinement; so I went to see her and examined her, and found a small uterus, absolutely an atrophied one. I told her that she was

not pregnant; she got mad at me, and she raked me fairly. I said: "I will give you a little more time." So she waited another month, and nothing ever arrived.

Then you get another patient who is anxious to have a child and wants to become pregnant; and they will come to you with presumtive signs and will say: "According to everything I am gone about four months." The assumptive signs are uncertain. The absolute signs, of course, are easy enough.

DR. R. L. PERKINS: We were never able to make a thorough examination of the size of the uterus, as the patient was extremely sensitive, and refused to take an anaesthetic; so we could not investigate the case as we wished. There were never any classical symptoms, or any sharp pain—any symptoms of collapse at all. The only indication we had that an operation might be necessary was the temperature in the last five days.

A PECULIAR CASE FROM PRACTICE.

C. C. RINEHART, M. D., PITTSBURGH.

Some twenty-five years ago, more or less, there was born in a neighboring State a girl baby, perfect as far as external appearances were concerned, but it was shortly discovered that there was a serious deficiency in that the anal orifice was missing at the proper place. It was shortly located up in the vagina, and the accoucheur proceeded to install a new one by closing the vaginal anal opening and drawing down the rectal pouch, forming an anus very closely approximated to the vaginal orifice, almost too close for future use, but it answered the purpose for childhood and early life.

Time growing on apace, and the girl blooming into young womanhood, became rather anxious to be informed whether these two orifices, which had hitherto answered the purpose for their useful functions, might be useful as they should be, should she determine to enter the marriage relation. In order that it might be known whether she should be able to enter this happy state or whether she should be doomed to an unhappy old maidhood, she was brought to my office for examination,

during which it was discovered that the vaginal and anal orifices were only separated by a membraneous septum, and also that there was another septum in the vagina, making a double vagina, and extending up into the uterus, constituting, as I thought, a double uterus.

Surgical aid was called in, in order to determine what means might be used to prepare her for a new relation, and it was concluded that the anal orifice could be moved back, and a perineum formed and the vagina made into one that might serve its useful purpose. Therefore, the anus was moved backward to nearly its usual position and a very good perineum formed, and the septum which constituted two vaginae was removed and a single one formed that we had every reason to believe would serve its purpose admirably. The septum in the uterus, however, was left untouched. The patient was thus left with a very good vagina and an excellent perineum, and, greatly to my delight, with perfect control of her bowel movements.

In due course of time, the man, the maid, and the occasion arrived, and she became engaged, and was naturally solicitous about her condition and preparedness for married life. Upon examination, I concluded that she might be married, which the surgeons who had operated upon her, after examination, verified. Having been thus fortified, she was married and shortly afterward became pregnant. In the meantime, she and her husband had moved "way out West."

As the time for her accouchement approached, they both concluded that it would be better to have officiate at her birth one who had some acquaintance with the condition of her inner organs, and I was invited to take charge of her confinement, which I consented to do.

Somehow, they had calculated with great exactness, and I arrived in the far Western town only about three days before the expected time, and found her approaching her time nicely and the labor came off on just the expected day. She was very large and I thought I could hear two foetal hearts beating.

Examination revealed that much progress had been made uncomplainingly, and I could distinctly feel the septum in the cervix with a head presenting on one side and two feet on the

other, a rather complicated condition of affairs. While determining what to do, a sharp and prolonged pain brought the head and feet both into the pelvis, with the feet in advance of the head. It was necessary to think and act quickly. I felt that I dared not make traction upon the feet, which were in advance, for to do so would cause the heads (I was sure there were twins) to interlock in the pelvis with almost certain death to the babies, and serious consequences to the mother.

I tried with might and main to force the feet back, but it was unavailing. I then put the forceps upon the head and started to deliver the head under anaesthesia. As I made strong traction upon the head, I was rather surprised to find the feet go back and upon delivery of the baby I searched in vain for another one. The explanation of the matter, as it appeared to me, was that the septum which I had thought extended through the whole uterine cavity only extended a little above the cervix and it was the baby doubled over the septum that deceived me into the idea that there were certainly twins and under the circumstances an almost impossible birth of living children.

I have not been able to examine the mother since the confinement to find out whether the child coming down in the peculiar way in which it came, had torn down the septum, but suppose it did.

I present this case only for the special features that made it interesting, and to show that we may be sometimes much deceived by appearances, and that we are by no means certain how matters are in closed cavities until the affair is concluded and we have opportunity for investigation.

Query: Was it the peculiar position of the child that gave the sound of two foetal hearts? Was I hasty in expressing the opinion, when upon examination I found feet and head presenting, that we certainly had twins?

NON-INTERFERENCE IN OBSTETRICS.

E. H. VAN DEUSEN, M. D., PHILADELPHIA.

Dr. W. D. Ward, in a paper read before the Rochester Pathological Society, April 23, 1908, says: "Uterine and ovarian surgery, appendical surgery, gall bladder surgery, gastric surgery, have all been taking such rapid strides that they seem to have attracted the attention of the whole profession."

Dr. L. M. Allen, in a plea for the more frequent performance of Caesarian Section, read September 15, 1908, at Ocean City, Md., quotes as follows:

Davis says: "When we contrast the difficulty and shock attended by pelvic delivery with the apparent freedom from shock seen after abdominal section in patients in good condition, the comparison seems greatly in favor of section."

Reynolds says: "Most obstetricians now agree that really difficult high forceps deliveries or versions are more severe operation than the primary Caesarian section."

Warren says: "Under any and all of the recognized methods of delivery the mother's life is not immediately hazarded; on the contrary, all methods but one are distinctly hazardous to the child; to save the child Caesarian section must have first place. In elective section its life is practically assured; in compulsory section its life depends not upon the section but upon the character of the previous attempts at delivery. All experienced obstetricians should agree that a difficult high forceps extraction or late podalic version is certainly more dangerous to the mother than a laparotomy, and much more to the child even when labor is conducted under the most approved technic by the expert."

Pool says: "It seems to the writer that it is a mistake to attempt version and breech delivery in any case where it is deemed unadvisable to draw the head through the pelvic cavity with the forceps. In such cases, Caesarian section has an advantage over the other operations in that it certainly saves the child and inflicts not more and usually less injury upon the mother."

Brown says: "It is my belief that a large number of women and children die or are severely mutilated each year on account of the fact that difficult or impossible procedures are adopted in place of Caesarian section. This opinion has too long been held up as a bogy by the medical profession. If practiced with forethought and careful attention to a few rules it is an extremely successful and easy operation."

Bonnaire regards his results as so favorable that Caesarian section should be regarded as no more dangerous for the mother than forceps delivery, while the outcome for the child is infinitely better.

Reddy feels strongly that Caesarian section has far too long been looked at by the average physician almost in the light of a forlorn hope, instead of being a comparatively easy operation capable of being performed almost anywhere successfully by any one following antiseptic rules. He considers the operation much simpler than many a case of appendectomy or accouchement force. force.

Kerr thinks, considering the results, that we are not only justified but compelled judiciously to expand the field of this operation.

Fry says: "The indications for delivery by Caesarian section should cover cases of minor degree of pelvic contraction where a few hours of labor pains demonstrated the inability of nature to mold and engage the head. This indication should be extended to embrace those border line cases in which the conjugata vera was even as much or more than 8.5 cm. for the justominor and 9 cm. for the simple contracted pelvis."

Dr. Charles B. Reed, in a paper on Pubiotomy, read in Chicago last March, recapitulates thus: "I would say that the operation recommends itself to the general practitioner because:

1. It is a desirable method of securing the delivery of 75 per cent. of his contracted pelvis cases with best results for mother and child;

2. The cases of difficult version and extraction and difficult forceps will be reduced to a minimum, or if done will be done under the most favorable conditions;

3. The tchnic of the operation is simple and easily acquired:

4. The dangers are few and mostly to be avoided by any one with moderate surgical training and conscience;

5. The operation can be done in a very few minutes;

6. The labor is easier and the chances for a living child are greatly improved;

7. It can be done in the home of the patient;

8. Only a very small armamentarium is required;

9. In many cases the pelvis is permanently enlarged, so that a subsequent labor may be normal.

In conclusion it may be stated as a prediction that while the forceps operation has required one hundred and fifty years in which to become so common that its abuse is frequently spoken of, it is reasonable, in my opinion, to say that the same accusation will be available against pubiotomy in less than fifty years for the same reason, namely, the great frequency of its performance.

It is the sincere belief of the writer that the operation, for the reasons given, has a great future and that its future rests not with the specialist, but in the hands of the general practitioner."

Dr. Adam H. Wright, professor of obstetrics, University of Toronto, said to the Toronto Academy of Medicine in February last: "My rule is to commence to induce labor within three days after the patient has reached term, as a matter of routine in all cases."

Probably enough has been quoted to indicate that the leaders of obstetric thought and practice in this country evince in their writings, not only a perfect knowledge of the magnificent advances in the obstetric art, but a disposition to belittle or discredit nature's forces and to more and more take upon themselves the burden of child bearing and to make of labor a surgical procedure rather than a psysiologic process. It is entirely within the bounds of probability that within a decade some capable but overzealous obstetrician should seriously advocate the delivery of nearly all babies by Caesarian section—allowing exceptions enough to prove the rule and to act as a stop to the conservatives.

There can be no doubt that elective Caesarian section can be done with an infant mortality absolutely nil and a maternal

mortality extremely small and with a recovery as rapid and apparently as complete as after a normal labor. Nevertheless, the large majority of us instinctively shrink from such a practice and only the very boldest have the temerity to assume voluntarily the whole responsibility and to say to nature's forces, "I have no need of thee."

On the other hand are the cases where nature's forces are so palpably inadequate to the task imposed upon them that delivery without intervention is an impossibility. Here the responsibility is thrust upon the obstetrician and cannot be evaded and of the obstetric operations the question becomes only which and when.

Between the typically normal labor and the physiologically impossible labor are an infinite number of grades shading into each other. Where is the point at which intervention ceases to be interference and becomes a necessity for the well being of the mother and child?

This question confronts every obstetrician at every birth. In the large majority of cases the birth takes place before an answer is demanded. No hard and fast rules can be laid down, for every case differs from every other and must be decided upon its own merits; but the relation of the passage and the passenger; the relation of the maternal strength and endurance to the resistance to be overcome; the nature and adaptability of the presenting part; the elapsed time and the present condition of the mother and child—these determining factors are always present. The difficulty of determining the size of the passenger, the maternal strength and endurance, the adaptability of the presenting part and the resistance, together with the impatient hasty spirit of the age, which drives every one to the rapid accomplishment of an object, are the reasons for much unwise interference in obstetrics.

Normal labor is a physiologic process and should be so considered, but this makes its safeguarding by surgical cleanliness no less important. Indeed, since sepsis is the ultimate cause of most of the serious results of labor, surgical cleanliness becomes an unavoidable duty and should be the inflexible rule.

A careful preliminary examination of the pelvis and abdomen

made in the eigth month of pregnancy and in multipara, a history of previous labors will serve as the best basis for predicting the character of the expected labor. Approximately normal pelvic measurements will, of course, be an indication for non-interference. Even a slightly flattened or generally contracted pelvis need occasion no apprehension.

Dr. Richard C. Norris, in a paper read May 26, 1908, writes: "The statistics of spontaneous labor occurring in the degrees of obstruction now under discussion gathered from various sources show an average of 70 per cent. of unassisted labors."

Dr. Barton Cooke Hirst, in a paper read at the same time, says: "If a primipara is given twenty-four hours of labor and a multipara twelve, a safe limit within which rupture of the uterus need not be feared, about two-thirds of the women would deliver themselves spontaneously, who, if treated according to the advice recently given the profession would be subjected to an unnecessary major operation."

Dr. Henry D. Fry, in discussing these papers, said: "Fully two-thirds of these cases were delivered naturally. * * * * Nature took care of these women and where they had contracted pelvis they had small babies."

Dr. E. P. Davis, in the same discussion, said: "As regards the statement that 70 per cent. of labors in moderately contracted pelvis would terminate spontaneously, the speaker's experience in a series of 1,200 cases of contracted pelvis of all sorts was that fully 80 per cent. would terminate in spontaneous labor."

Dr. E. Gustav Zinke, in a paper read at the meeting of the American Association of Obstetricians and Gynecologists, September 22, 1908, writes: "According to Baisch, 'the period of compromise operations records, in narrow pelvis, about 60 per cent. spontaneous births; other obstetricians, like Braun, only 35 per cent.' If we are made to understand that in the past from 50 to 60 per cent. of all women with narrow pelvis were delivered by operative interference and that within recent years Saxinger, Pinard, Zweifel and Doederlein have secured 80 per cent. of spontaneous births with expectant treatment of narrow pelvis, we can realize the extent and importance of the progress made."

Dr. Simon Marx read a paper, December 12, 1908, before the

New York Obstetric Society, in which he states: "All observers are agreed that an overwhelming majority of these so-called pelvic contractions give no trouble; about 80 per cent. of the labors terminate normally."

When the contraction of the pelvis is excessive an entirely different problem is presented.

Dr. Norris, in the paper mentioned above, also writes: "For the absolute indication is it not time, in view of the modern results of Caesarian section to formulate a general rule, to which there will be few exceptions, that when the conjugata vera is less than 7½ cm. in simple flat and 8 cm. in generally contracted pelvis, Caesarian section at or before the onset of labor should be the elective operation."

This is not interference. This is intervention in a physiologically impossible labor.

When at the preliminary examination the occiput is found to be posterior and the small parts of the child anterior, the knee chest position night and morning will probably transform the presentation to an occiput anterior. A breech presentation demands no modification. It occurs usually, in the writer's experience, in the case either of a small child or of twins. In the latter case any attempt at modification would probably be unsuccessful and even hazardous.

The relation between the maternal strength and endurance and the resistance to be overcome is impossible of exact measurement, but with experience comes a kind of intuition which is usually dependable as a guide. "Generally speaking," to again quote Dr. Marx "it can be stated as an unalterable truism that no labor should be interfered with except:

First: There be present symptoms of beginning maternal exhaustion as shown by rise in temperature and pulse rate, and the presence of a contraction ring, all indicating the futility of the labor, or

Second: Foetal exhaustion as evidenced by marked excursions of the foetal heart's action, the persistence and continuance of an umbilical scuffle, and the discharge of meconium, except in a breech presentation."

When a case in which the preliminary examination has been

satisfactory, has been in labor for some time with no progress, either the maternal strength is insufficient or the resistance too great, or both. A careful investigation will often decide. When the suffering is very great, a hypodermic injection of ¼ grain of morphia and 1-100 grain of hyoscine is often of great service in co-ordinating the muscular movements by relieving the suffering. Late in the labor, chloroform is very efficient. This co-ordination of the muscular movements will usually bring about a correction of a slight malposition and restore the progress of labor, which will proceed to spontaneous termination or at most require only gentle assistance. Any forceps delivery, which requires violent exertion, such as bracing the feet, or the effort of two people, is an evidence of poor judgment in the selection of the method of overcoming the difficulty. Such a delivery is no better than Pubiotomy or Craniotomy. If subpubic sepsis has been guarded against, probably Caesarian section would be much safer for both.

This question of sepsis and asepsis is probably the most generally important one in obstetrical practice. Wonderful advances, especially in hospital practice, have been made.

In one hospital in which careful records have been kept, and this is probably a fair index, the non-septic cases.

In 1877 were 31 per cent.
In 1887 were 70 per cent.
In 1897 were 75 per cent.
In 1907 were 92 per cent.

Of the septic cases in 1907, 18 per cent. were slight; 2 per cent. were severe, and 6 per cent. doubtful. The one severe case is charged to an error in technic, discovered too late to avoid its effects. Of the doubtful cases a considerable number were believed to be gonorrhoeic.

In this hospital from 1862 to 1872 the death rate from sepsis was 1 in 50, a much better showing than many hospitals at that time. From 1897 to 1907, in a total of nearly 3,000 cases there was only one death from sepsis and this was an eclamptic case in which the infection had probably no more to do with the death than the kidney condition. This splendid improvement is the result of antisepsis. Antisepsis broadly means cleanliness. It means a bath,

a soap and water scrub with a brush, followed by a rinse, preferably a shower bath. It means the use about the patient of coverings that are sterile. It means invading the vagina as little as possible, and then only with a sterile instrument, or a carefully prepared finger covered by a carefully sterilized glove. In the hospital supplying the above statistics no douches are given before, during or after labor, except on special order. The nurses are expected to rinse off the genitals with sterile water after every urination and to wash them at least twice a day with bichloride solution and also after defecation.

Dr. Douglas H. Stewart, an ardent advocate of the chlorine technic, writes: "It has been my experience that if the accoucheur leaves the vagina alone, but has the patient wash off the vulva and perineum daily for a week before the day of expectation, using a heaping teaspoonful of washing soda and also of calx chlorinata to a quart of water, avoiding any mechanical means of drying * * then he will often find the vulva sterile or at least free from pathogenic germs when the patient is put on the table for delivery." Again he writes: "Omit the common process of indiscriminate douching (vaginal) * * * An ordinary vagina can best care for itself when interference is at its minimum."

A labor conducted with the fewest possible number of vaginal examinations and those, as well as all other, procedures requiring contact with the patient, with the most scrupulous antiseptic care, is of great advantage not only in normal labor, but even more so when it is found that active intervention is required. It enables us to await with safety the result of a test of labor in border line cases, and to then advise Cæsarian section, without feeling that by waiting the patient's chances have been sacrificed.

Dr. Carlton C. Frederick said, September 22, 1908, "I believe that the larger mortality in Cæsarian section cases, after delayed operation, is more due to subpubic infection before section than to the exhaustion before section. This fact is borne out by the experience of several operators who have done sections frequently after patients have been in labor for over 24 hours under conditions such that the labor has been antiseptically conducted."

Dr. B. C. Hirst has said that there need be no dread of a Cæs-

arian section after hours of labor pains if the operative and aseptic technic is good.

The general practitioner is pre-eminently the accoucheur and he must be looked to for the improvement in the morbidity as well as the mortality of the mothers and the mortality as well as the morbidity of the children. He will accomplish this by careful antiseptic technic, especially in entering the vagina (which will include the use of rubber gloves); by a careful preliminary examination one month or more before delivery; by abandoning violent high forceps extraction; by patiently waiting a reasonable time, using such means to pacify the patient and friends as his mental acumen may suggest; by refraining from such interference as the rupture of the amniotic sac before its dilating function has been performed, the use of ergot before the completion of labor, the prolonged use of chloroform or ether, the forceful or hasty delivery of the afterbirth.

This question of a conservative mental attitude of obstetricians and gynecologists is worth serious attention, for the greatest menace to the public's confidence in gynecologists and operating obstetricians springs from no lack of ability, but on the contrary from the offhand lightness of manner with which the gravest operations are approached—a direct effect of the recent wonderful and brilliant achievements.

DISCUSSION.

DR. THEODORE J. GRAMM: Again I would like to speak upon conservatism. Now, the Doctor has practically (if you will analyze his paper) made an admirable plea for the performance of Cæsarian section; the first part of his paper indicates how readily it may be performed, and the very good results that may be obtained, and even goes so far as to describe some of the limitations and indications for this operation. Now, of course, he did not wish that turn to be given to his remarks. On the other hand, to go down to the subject of conservatism, I imagine the Doctor has in mind that the very first thing necessary is to determine the conditions that exist in the given case.

Now, then, that leads me to advocate, as I have on many occasions, the use of preliminary obstetric examination. That is the

first thing you want to do. It is on this account that I have been able to weed out a number of cases that would never have delivered themselves, and have been able to apply the Cæsarian operation, or other nether obstetric operations, in quite a number of cases. It is no conservatism to allow a case to be drawn out in labor and make futile attempts at delivery, and then ultimately, as a matter of compulsion, to subject them to a serious surgical operation. This is notoriously harmful when there is an absolute indication for the Cæsarian section, in other words, when the pelvis is materially contracted. Now, I think the Doctor is giving a wrong impression; or, rather, I should perhaps say that a wrong impression may be drawn from the Doctor's statement, that 70 per cent. of cases will easily deliver themselves if given the opportunity—70 per cent. of cases of contracted pelvis. We must limit, we must differentiate and define the limitations for the several obstetric operations. If a case is allowed to progress until the Cæsarian section is indicated after futile attempts have been made at delivery, the case is notoriously bad as regards prognosis.

I am very glad to note that the doctor has touched upon another subject—the use of the vaginal douche. I am very certain that I incline to taboo its use—I come in contact with some of the very worst cases of obstetrics, from a social standpoint, that occur in the city of Philadelphia. When the proper occasion occurs, I propose to report these cases. They are under the very worst social conditions, and yet in the last ten years I have had no death; I have had no case of puerperal fever. There was one death from eclampsia, a good many years ago, a few minutes after entering the hospital. These cases, in many instances, can be conducted without a rise of temperature and can be conducted over a protracted period of time and yet there will be no death. In other words, if the case is allowed to remain free from infection as carried from without—that is to say, on the hands of the accoucher, or on the hands of the midwife, or on the part of the nurse, or on the douche nozzle, no matter what antiseptic solution you inject through it, even a strong bichloride solution—it is possible to conduct the very worst cases socially placed through accouchement without any serious injury.

In other words, we must recognize the fact that labor and de-

livery and the getting up are normal processes, and are subject to physiological laws; and, moreover, they are subject to laws which are closely related, and confirmed by all of our studies of bacteriology and the more recent studies of immunity; in other words, all those new subjects that are being studied along the lines of antitoxins and preventive medicine; all that we are developing in that line is very closely exemplified in the ordinary processes that take place of a conservative character in the system itself and of a protective character on the part of the system itself; consequently, in these cases that I have been referring to, I don't use a vaginal douche of any sort unless it is indicated by either the odor of the discharge, or the rise of temperature to—we will say—100.2.

When is Cæsarian section called for? In answering that, we would occupy very much more time than agreeable to you; but it narrows down to the two indications named by the Doctor, namely: danger to the child or the mother. I reiterate the fact that we will only be in a position to determine when intervention must take place as regards serious operations, by first of all knowing the existence of tumors and all that sort of thing, and then, of course, on the other hand, to watch the case through its labor and to interfere at the time when the practical indications very well recognized are seen to exist.

DR. W. C. MERCER: Most of the obstetrical cases are conducted by the general practitioner, and as Dr. Gramm says, he must know something about the patient beforehand. To measure the pelvis and examine it internally and pass any kind of judgment upon the results requires considerable experience, and besides the general practitioner will not make a regular practice of making these examinations. I know from my own experience that in examining cases for admission to the hospital we must have a lot of experience and constantly measure the pelvis. If I take men who have had no chance whatever and instruct them how to measure the pelvis they will make measurements that will be two or three centimeters out of the way, some of the measurements. An internal examination alone at times tells little about the condition of the pelvis, not enough to enable us to pass judgment upon it. So the general practitioner who attends most of the obstetric cases

must certainly be drilled in the making of pelvic measurements in order to make his judgment valuable. An exaggerated deformity can be easily measured; with a slight one it is a harder matter.

DR. E. H. VAN DEUSEN: Dr. Gramm says he is afraid that I have given a wrong impression concerning Cæsarian section. When Cæsarian section is proper to be done it should be done; but these border-line cases should not be taken to the table immediately without the previous test of labor.

I made the point in the paper that antiseptic preparation and antiseptic care is of absolute importance, not only in the conduct of the normal labor, but of even greater importance in the conduct of a labor that is not going to be normal. If you have observed rigid care and antisepsis in the conduct of a labor, there is not very much danger—I will substitute for that statement, "not so very much danger"—in the Cæsarian section. The danger of a late Cæsarian section is on account of sepsis and on account of the previous handling of the case; so that from an allround standpoint it is necessary that these cases should be cared for aseptically; and the point I want to make especially is that the fewest number of examination of the patient should be made; a great number of examinations are unnecessary. For your own information concerning the patient's condition, examine that patient a month before labor, not when labor is on; and then you run no risks of septic infection.

TWO CASES OF ACCIDENTAL ABORTION AND THEIR TREATMENT COMPARED.

M. A. WESNER, M. D., JOHNSTOWN.

Abortion is the premature expulsion of the embryo or immature ovum from the uterus at any time before the end of the sixth month of utero-gestation. These expulsions may take place at any period within the time herein mentioned, but they are by far of most frequent occurrence between the first and fourth months of pregnancy. Should they occur during the first month they are usually termed ovular; from the beginning of the second to the

end of the third month, embryonic; and from the end of the third to the end of the sixth month, foetal.

I use the term accidental abortion in contra-distinction to that other form which is notoriously intentional and has for its object and aim the destruction of human lives for a money consideration, the end of which is atrocious murder in all its wickedness and cruelty, although the victim may be an unborn child. It is hard indeed to conjecture which of these two forms occurs most frequently, but I am inclined to give precedence to the latter.

Strange as it may appear, it is a fact nevertheless, that very few of our medical colleges give this subject, with treatment thereof, the proper attention which its vast importance requires. I remember hearing only a single lecture during my college days on this topic and the preventive measures to be used as well as the management of the different cases and their complications. Why this unwarranted silence?

Nearly all of these cases have complications, some few, others very, very many. For this reason I have chosen just two, the subjects of which are sisters.

Case 1. August 11, 1908, I was hastily summoned to the home of Mrs. M., aged 31 years, a lady of dark hair, dark eyes, a dark complexion and the mother of four children, and at the end of the third month of utero-gestation. Upon examination I found the woman lying in a pool of blood, foetus had come away and placenta was almost entirely adherent. Whatever was to be done had to be done promptly, for my patient was almost bloodless and there was no time to wait. After delivery of the foetus the placenta became a foreign body, which caused the hemorrhage to continue and the idea was to get rid of it as soon as possible. This was done by means of the blunt curette. Placenta was taken away in shreds until all of it was removed and one dose of Sabina, 10, administered, and in a short time hemorrhage ceased. Patient made a splendid recovery. This ends case No. 1, and how different from Case No. 2.

Case 2 differed materially with this one, although happy in termination. This lady is a sister of Mrs. M. She is Mrs. S., aged 21 years, a primipara, dark hair, dark eyes and a dark complexion.

May 24, 1908, she was attended by myself in labor, which occurred at the end of the fifth month of gestation. The result was a small shriveled foetus, which to all appearances had been dead about two weeks. Placenta came a short time after, there was no untoward hemorrhage, the whole affair seemed favorable and I did not administer any medicine whatever. Every indication pointed towards a speedy and perfect recovery. Three days passed with my patient progressing favorably, anxiously awaiting the day when she would leave her bed. However, this condition was only the calm before the storm, the precurser of the terrible ordeal which she was destined to undergo before her final recovery. On the morning of the fourth day I was hastily called to her bedside with the information that she could not speak. Upon my arrival I found that her whole left side was completely paralyzed, tongue and all, and she was terribly agitated. Here we had numbness of the parts, tearing and drawing and aching, with painful stiffness of same. On these symptoms and a few others I prescribed Rhus. Tox. high. In the course of twelve hours her speech returned and in four days later she was able to flex that disabled leg on the thigh under the influence of this one remedy. Arm was about as before, but fore-arm had improved. Lochial discharge was 'normal.' This condition did not end our patient's trouble, however. June 2, nine days after abortion, I found pain and tenderness above and below Poupart's ligament of paralyzed side, and next day lower extremity was swollen to nearly doubly as large as before, clear down to the ends of the toes. Owing to the loss of sensation as well as motion of left side, patient did not suffer the extreme pain incident to such diseases. However, it could be distinctly seen that we had a case of phlegmasia dolens to deal with. There was pain from hip to foot, aggravated by touch and movement, copious perspiration without relief; pale swelling of the leg; constipation; dry lips; intense thirst; pulse 120 and temperature 103. On these symptoms she was given Bryonia 30, frequently repeated until an improvement showed itself, which took place in less than twenty-four hours. After that she got an occasional dose of the same remedy as the necessity of the case seemed to require. The patient steadily improved and on the eighth day the whole aspect of the left leg had changed, swelling, pain and all but paralysis having

disappeared, and the supposition was that we had finished with all but the loss of power, although in this we were sadly deceived. June 16, just one week after the last vestige of inflammation had gone, the same trouble made its appearance in the right leg, with much greater severity. Swelling reached from groin down to the ends of the toes and the whole leg was double its normal size. Pain was simply intense and my patient was obliged to endure the most excruciating suffering at the end of her eventful experience. Temperature was 104, pulse 130 and she had the appearance of a very sick woman. In this I pursued nearly the same treatment as before. Bryonia 30 was given in the beginning every hour until I could notice a distinct improvement in regard to pain, which took place in less than forty-eight hours. After that it was less frequently repeated. In addition a hot lotion of Bryonia in water was applied and kept in place from the groin down to the ends of the toes. This was the only medicine she received. Pain and swelling grew constantly less and by July 2nd all had disappeared and patient sat up. Paralysis was afterwards treated, the principal medicine being Rhus. high, infrequently repeated and today not a vestige of that trouble remains.

Both of these cases had complications, but those of the latter far exceeded the former. It is seldom that you find a case of abortion without some complication or other, and hence, they do not often show themselves in the form of extremes either way. However, when we consider the treatment required for either and reflect upon the fact that recovery of one was prompt and immediate, while the other lingered for many weeks, we certainly must admit that there was a vast difference between the two patients, who are sisters.

REPORT OF THE SECTION OF GYNÆCOLOGY.

Management of Abortion by the General Practitioner, by Edward P. Clark, M. D.

Pelvic Backache, by D. B. James, M. D.

Endometritis, by N. F. Lane, M. D.

MANAGEMENT OF ABORTION BY THE GENERAL-PRACTITIONER.

EDWARD P. CLARK, M. D., PITTSBURGH.

I select this subject because I feel that the general practitioner is in need of simple rules which should cover his method of procedure in any case of abortion or miscarriage. The general practitioner is the man who should have these rules firmly fixed in his mind because he has the vast majority of these cases to treat.

The necessity for the proper treatment of these cases is forced upon us when we consider the following statistics: According to Williams, of Baltimore, every fifth or sixth pregnancy in private practice results in an abortion. Dr. Taussig, in a recent article, says: "out of six hundred Gynecological cases examined at my clinic the proportion of abortions to confinements at term is 1 to 2.3. In my clinic the percentage is not quite so high, the last 300 cases show the proportion of one abortion to every 3.8 confinements." If it is true that one pregnancy in every five in private practice results in an abortion and if one to every 2.3 pregnancies in dispensary patients results in abortion how important it is that the cases should be treated properly. That they are not properly treated is the sad fact thrust upon the gynecologist nearly every day. How often the specialist hears the plaintive tale, "Doctor, I have not been well since I had a miscarriage, one or two or ten years ago."

Examining these cases he often finds a tender red entroitus, so tender often that coitus is refused in one married woman, to my knowledge, this had existed for eighteen years. There is pus in

the urethra, a foul leucorrhea from the cervix and even flea bite redness over Bartholins ducts. You immediately think of gonorrhea. Possibly I am mistaken, but I have examined the pus from many of these cases repeatedly, and I am convinced that the germs of a mixed infection following abortion closely stimulates the latent stage of gonorrhea.

Pyosalpinx, peritonitis, parametritis, cystitis, severe or mild leucorrhea, septicemia and pyemia, need but be mentioned as a few of the complications following abortion which cause many women to lead a miserable existence.

Now, in treating these cases, the physician should have a few points clearly outlined in his mind. The first of these should be to remember the dividing line between abortion and miscarriage. Why? Because if he knows the pregnancy is not over sixteen weeks' duration, the entire product comes away en masse; whereas, if the pregnancy is over sixteen weeks, it is a miscarriage, and the foetus is passed first and the placenta and membranes are often retained. This is necessary, in other words, because he must be absolutely sure the uterus is clean before he can determine the next step to be taken. The division between miscarriage and premature labor at the twenty-eighth week, does not affect the nature of the treatment and therefore, does not concern us here.

The question of the curette is the only one over which I hesitate. Should we advise a general practitioner to curette most of these cases? I thoroughly believe that all cases of criminal abortion produced by instrumentation, should be curetted; because the instrument—the catheter, the slippery-elm, the crochet needle, or even the gauze used by the professional abortionist, often is not aseptic, and therefore, an infection is apt to be implanted.

I believe all cases where the doctor has not seen the foetus and secundines, and has not convinced himself that the uterus is empty, should be curetted. And certainly all cases, where there is the least doubt as to the sterility of the uterus, should be curetted. Perhaps many of you think that a curettment is not necessary in all these cases. Perhaps not. Neither is anything more than a chemical engine needed for many fires; but our wise city fathers always send the hook-and-ladder and the steam-engine in case they might be needed.

No doubt, we have all heard men claim that they do not believe in the germ theory. They say that they have attended so many hundred confinements without losing a mother; and all they do is to wash their hands with any piece of dirty soap in a filthy family wash-basin. I do not doubt their word, but I would not insult the intelligence of my hearers by claiming such a procedure as proper. Who knows of how many cases of chronic invalidism they have been the direct cause. An infected abortion is a similar condition. Germs have been carried within the uterine cavity; and, yet, because the woman recovers that is not an indication that she has been properly treated. I would rather curette a few cases unnecessarily than to allow one patient to suffer from the after effects of an infected abortion. A curettement done under proper antiseptic precautions will do no harm, and I am pleading for a more frequent use of the curette in these cases, because I believe that it is the only way of saving hundreds and thousands of these unfortunate women from future pain, future operations or future months of ill-health. Nevertheless, I say, I am loath to advise curettement by the general practitioner, not because it is needless; but because I hesitate to make it hard and fast rule for all practitioners. All men do not know surgical asepsis and antisepsis even in this twentieth century; and if a physician is not sure of this he should not enter the uterus. I hesitate about advising all practitioners to use the curette, because of the danger of uterine puncture. A large, boggy, pregnant uterus must be treated with respect, and so our quandary is this: Most every early abortion should be curetted, otherwise a large proportion will be followed by unhealthy sequela. All practitioners may not be competent to curette the uterus, because of improper training, careless technique or lack of experience.

The never-ceasing discussion as to whether the finger or the curette should be used in certain cases, is still rather hard to reduce to simple rules. The judgment of the physician is here brought into play and he must rely upon his experience to a large extent.

There is no doubt that many infected uteri may be curetted and made antiseptic during the early stages of infection; but, if we have to deal with a violent infection, the finger should be used to

clean the uterus of the product of conception and intrauterine douches of antiseptic solutions employed to fight the germs. This will undoubtedly be followed by a smaller mortality percentage than by the use of the curette. Where the patient is severely infected the object is not to save the patient from local complications, but to save her life. The curette, it is generally known, by increasing the raw surfaces increases the area of absorbtion of septic material. In most of these cases a curettement is required some days or weeks after all danger from infection has passed.

Of course the systemic symptoms are not to be relied upon entirely as to the kind or degree of infection. The odor is often looked upon as an important indication of infection, whereas, we know that a virulent, streptococcic infection may have almost no odor and little or no discharge from the uterus. A septic thrombus may form in the ovarian or hypogastric veins and show few or no signs of infection for ten or more days after the abortion, and yet it will result in almost certain death.

Some men complain that they cannot reach every part of the interior of an enlarged, pregnant uterus and feel certain that it is empty when using the finger as a curette. This may be overcome by pressing the uterus down with the hand on the abdomen and by pressing over each part and each horn separately the entire cavity may be palpated. In other words, the curette or the finger should be used according to the kind or degree of infection and this can be decided only by a study of each individual case by the man at the bedside.

It is unnecessary to state here that a curettement should never be performed when we have complicating pus tubes.

The only remaining difficulty to be considered is the dilatability of the cervix. The cervix is often so tightly contracted that to try to dilate it to admit the curette is difficult, and to admit the finger is nearly impossible. In an early case, this is overcome by placing the patient in the Sim's position and packing the vagina with gauze. In twenty-four hours, remove this gauze and it will be found that the cervix is dilated enough to admit the uterine packer, when the uterus and the vagina are packed with gauze; and in another twenty-four hours the cervix is soft enough so that the finger will be admitted or at least can

be after slight mechanical dilation. I quote from Dr. Thomas Watkins, of Chicago: "I not only follow out the old treatment of the vaginal pack, in cases where the uterus cannot be emptied without a great deal of traumatism, but pack the uterine cavity also. This treatment can be extended even to cases of infection. We sometimes have a woman sent to the hospital with a temperature of 104 or 105 degrees with undilated cervix, and we no longer think it is necessary to empty the uterus at once, but it is much better for the patient to pack the uterine cavity and vagina with gauze. The next morning the temperature is generally normal. The gauze is left in forty-eight hours and the product of conception is either expelled or can be removed with very little traumatism or shock."

In conclusion, let us fix these simple rules for attending abortions and miscarriages. First, remember that after about the sixteenth week of conception, the foetus is expelled and the placenta and membranes are often retained; before this time, the entire product is passed en masse. Second, all early cases, where infection is suspected or where retained product is in doubt, curette. If, for any reason you do not feel competent to do the work, call in some one who is. Third, if you see the case before marked systemic symptoms appear, curette. If you have much systemic infection, use the finger and follow by intrauterine douches. Fourth, a tightly contracted cervix is overcome by packing the vagina and uterus with gauze. When this is retained for twenty-four or forty-eight hours, the uterus can be entered with the least possible trauma.

DISCUSSION.

DR. THEODORE J. GRAMM: Abortion is very commonly encountered in practice, and it is unfortunate that it is so. We must remember that while about one in every five or six cases of pregnancy eventuates in an abortion, the majority of those miscarriages or abortions are criminal. This fact is not usually recognized. We usually think that abortion occurring among our patients is not criminal—that other physicians' patients would do those things, but not ours. But it is a fact that the majority

of cases of abortion are criminal ones, whether we positively ascertain the circumstances of the criminality or not.

Now, then, what are the causes of spontaneous abortion? They are ill-health in the mother, Bright's disease; syphilis commonly; an accident, but by no means the trivial and trifling accidents that are commonly ascribed as causes for abortion. If we view the subject in that light of the case, abortion assumes an altogether different aspect. In other words, the majority of them are septic. Now, not to prolong this discussion, for I only want to make two or three points—I would say that a man who has not been trained in operating should never curette a case of miscarriage or abortion. It is one of the easiest things in this wide world to put a curette through the uterus—not through a uterus that has not been impregnated lately, but through a uterus that has been impregnated and softened by normal processes, and then softened still further by pathological processes. Even to those who operate frequently it has happened that the uterus has been perforated by the curette. Some years ago a gentleman asked me where I thought a curette had gone that he had introduced into the pelvic cavity somewhere about eighteen inches from the vulva. He said he had introduced it with the greatest ease. Of course he did; and it had gone up and up and up pretty nearly eighteen inches. There was very little doubt where it had gone; and you do not need to question what became of that patient. An abdominal section was made, and she died of septic peritonitis, due to perforation of the uterus. In other words, I want to emphasize the fact that the wall of the uterus, after it has been softened by these two conditions I have referred to, is capable of being perforated in so easy a way that it is perfectly not only liable to happen to one who operates habitually, but is much more likely to happen to one who does not often find it necessary to do gynaecological operations.

In addition, one of the most distinguished operators in Philadelphia, operating, perhaps, more than any other man there, has gone on record that he regards curettement as one of the most dangerous operations that could be done to the human body.

In order to give you something really worth while, I will tell you a treatment extremely effective in cases where you cannot

empty the uterus, or rather, where you cannot be certain that you will do so, where you cannot go into all these different crevices and all these different curves and circles, etc., where the very septic matter, or adherent decidua, may be retained. It is a treatment that has emanated from two sources, I believe, spontaneously. It consists in the use not of a curette (I hate to see a curette in any surgical, any obstetric outfit; I do not think it has a place there); but of a pair of long forceps having not a sharp flange—enough to remove decidual tissue, which it will do very much easier and very much better and with very much less danger than if you use a curette.

Then, after removing the loose tissue (either by the finger or by the forceps), the uterus is irrigated with bichloride solution. After irrigating the uterus, leaving the irrigator in situ and pack gauze around it, filling the uterine cavity, but not very tightly, not enough to distend it, and then take a syringe containing 87½ per cent. alcohol (some of those originally using it have used 95 per cent.) and inject that into the irrigatory nozzle, thus saturating the gauze which is inside the uterus, using for that purpose about an ounce of alcohol. The gauze is changed the next day if necessary. This procedure operates to remove the odor and bring down the temperature; and you then have a case which will go on to a normal involution. This treatment will be most marked in its efficacy in cases where there is an odor. I am very sure that I have treated cases that would have died except for that treatment. I am using an irrigator which has an inside tube; and the head of it I unscrew so as to have the instrument easily withdrawn through that gauze after the alcohol has been injected; in other words, you have the uterus then packed with gauze saturated with alcohol.

Now, then, this could be enlarged on very much. For example, I might point out that during the war the most effective treatment of gunshot wound was to wrap them up with a smooth bandage and pour a bottle of whiskey in it; and alcohol, in some of the methods of disinfecting the hands, is one of the most effective portions of the antiseptic preparations for the hands. Ahlfeld * * * depends on it almost entirely; so that you see this treatment is based upon scientific principles.

DR. N. F. LANE: I am glad to hear Dr. Gramm speak about the gauze, and about the irrigation method. I was going to put that in my paper (in fact, I had it in), regarding the treatment of these acute septic infections following labor. I never have practiced the method; therefore I did not put it in; but some years ago I saw an article upon this subject where, instead of using the irrigator, they used a catheter, packing gauze around it in the uterus and for three or four hours would inject an ounce or two of alcohol through that catheter, letting it run out through the gauze and the vagina; and the results they had were very favorable.

I feel about the curettage of these cases as Dr. Gramm does. I never approach one without fear. I have had a number of experiences in these cases that have made me treat a uterus with a great deal of respect. It is the easiest thing in the world to put a curette through one; they are practically rotten at times. In some of the cases I ran across I saw a very peculiar thing, which has not happened since with me: In one month I ran across three cases of perforation by efforts to produce abortion, so that if I had not been very careful, I would have put my curette into the uterus before I found out what the trouble was.

DR. R. W. McCLELLAND: I have used the method outlined by Dr. Gramm, which I think is one of the best methods recommended; but I might emphasize the importance of not using the strongest solution of alcohol, which I believe chars the tissues and prevents the penetration of the alcohol through the outer surface of the diseased and decayed tissue; but by using an 87 per cent., or even a little less than that, we find, just as in our preparations of specimens for the microtome, we have to use the milder solutions of alcohol to penetrate the tissues to preserve it.

D. E. P. CLARK: I am sure I am very glad to hear of this method, which is new to me; and I shall certainly use it.

I did not understand how Dr. Gramm put the gauze around the catheter. Was it just around the cervix?

DR. THEODORE J. GRAMM: I fill the uterine cavity. I use the forceps to remove the decidual remnants.

PELVIC BACKACHE.

D. B. JAMES, M. D., PHILADELPHIA.

The prevailing opinion of the laity as to the cause of backache, is, in the male, kidney disease, and in the female, disorders of menstruation or pelvic disease. While it is true that these organs do represent etiological factors for backache, in proportion to the number of patients presenting this symptom they are in the minority.

In women there is no one symptom, so universal, or so uniformly distressing, to which she is heir. Numerically increasing with puberty it continues during the menstrual life and until the approach of the menapause and declines with its subsidence. But even in these cases, diseases other than pelvic are most frequently the etiological factors.

In the study of backache, it is essential to remember that pain is only a subjective symptom, and its intensity must be estimated by the statements of the patient, by the manifestation of its presence and by the nature of any lesion that may be discovered as the probable cause. The degree of susceptibility is personal and individual, and the examiner must take cognizance of individual peculiarities. The neurotic will, for example, complain of severe pain that one of dull sensibility would ignore, as illustrated in the cases of posterior displacements where backache is regarded as a pathognomonic symptom. Those having the displacement in the greatest degree often complain the least, and vice versa.

It is not to be forgotten, however, that the pain suffered by the abnormally sensitive person has as real an existence in consciousness as the slight discomfort felt from the same cause by those of less acute pain preception, and, further, that the sensibility to pain is apt to increase by long continuance and the patient become less able to stand it.

The causes of backache below the dorsal region are legion and it is often difficult, but essential for proper therapy, to discover the true lesion. It is found as a prominent symptom in lumbago

(lumbo or lumbo-thoracic) in neuralgic and rheumatic affections, in diseases of the spine and spinal cord, in hipjoint and sacro-iliac joint diseases, in diseases of the rectum, as hemorrhoids, cancer and ulcer, in victims of fatigue and debility, in aneurism, in cases of pendulous abdomen, in cases of disease, dislocation or fracture of the coccyx and in pelvic diseases.

In backache due to pelvic diseases the seat of origin can usually be traced to two central points from which the pain will radiate, even to the thighs. The first diagnostic point and the one found in nearly all pelvic disorders, is pain and tenderness at the fourth and fifth lumbar vertebrae; the seat of origin of the spinal nerves governing the internal pelvic organs. The second diagnostic point is pain and tenderness on either side of the second sacral vertebrae, which may be attributed to infections in the cellular tissue of this region (posterior paramentritis). It is here that sacro-uterine ligaments find their attachment, having sprung from the posterior surface of the uterus, at the junction of the body and cervix. These ligaments are described as prolongations of the hypogastric fascia and utero-vaginal tissue. They contain muscular elements, blood vessels and small nerve filaments belonging to the anterior division of the fourth sacral nerve.

In making a vaginal examination, *pain* may be produced by the least pressure, even in cases where the organs are in their normal state and position, as for example the nauseating sensation produced when the normal ovary is touched. When inflamed the severity of the pain is naturally increased, but even in the presence of inflammation backache is not produced. Undue pressure on an inflamed uterus produces a localized pain in the region touched; but backache is not produced. With an attempt, however, to lift or pull the cervix forward in case of inflammatory disease of the sacro-uterine ligaments intense backache is produced. If the finger traces the ligaments backward the pain will be seen to increase until the attachment at the second sacral vertebra is reached. The involvement of these ligaments is usually secondary to infections of the ovary and tube and the connective tissue of the broad ligaments and in cases of endocervicitis and cervicitis engrafted on a lacerated

cervix. The majority of infections are of streptoccic origin, showing lymphatic involvement or absorption following manipulations in the uterus or infections following delivery at or before full term, or in inflammatory diseases associated with lacerations of the cervix. In this variety there is a unilateral involvement. In a small percentage of cases there will be found a bilateral infection, and further examination will show the origin to be gonococcic. A small proportion may be attributed to infection by the colon bacillus.

The infections may be acute or chronic. In the acute variety examination shows the ligaments exquisitely tender to manipulation from direct pressure or when attempting to lift the uterus or cervix forward and putting the ligaments upon a stretch. They will be found thickened, owing to the exuded serum and associated inflammatory symptoms, even to the size of a lead pencil. Their tendency may be to resolution, suppuration, or chronicity.

With the diagnosis of acute parametritis posterioralis an attempt should be made to hasten resolution to avoid the usual tendency to chronicity. Failing in this stage to attain resolution an attempt should be made to prevent suppuration, or, if that be impossible, to hasten its formation. In the latter case we are dealing with an acute phlegmon involving the connective tissue of the broad ligament with a tendency to point posteriorly. To the examining finger is imparted the sensation of an elastic exudate surrounding the rectum and extending into the recto-vaginal septum.

The treatment in the acute variety, without pus formation is rest, ice bag, free evacuation of the bowels produced by salines and followed by saline injections, vaginal douches frequently repeated, and the homœopathic remedy.

With the formation of pus, an incision should be made in the cul-de-sac, even before the pointing manifests itself, for the tendency in this stage is to involvement of the structures that will produce backache so common after the delivery, at or before term.

Parametritis Chronica may manifest itself in one of two varieties: parametritis hyperplastica or parametritis atrophicans, the former being the most frequent.

Upon examination the hyperplastic variety will reveal a tense band or bands, extending laterally from about the junction of the cervix and the corpus, and running upward and outward to the second sacral verterbra. These bands are exceedingly tender to the least manipulation and the pain increases the further the finger examines and reaches its acme at the seat of attachment of the ligaments where the typical backache, increased in its intensity but of the same character for which the patient seeks relief, is produced. It may be necessary to a satisfactory examination to introduce two fingers into the vagina, the index lifting the cervix forward while the middle one palpates the ligaments. As in the acute variety, an attempt to pull the cervix forward will produce the backache, but not of the same intensity as when direct pressure is made upon the ligaments.

Parametritis Atrophicans, with involvement of the sacro-uterine ligaments is more difficult of diagnosis, the ligaments being so shortened and contracted. This shortening produces a dislocation forward of the uterus while the cervix is pulled backward, toward the sacrum, the position being one of anteversion or anteflexion. While it may be difficult to outline the ligaments, pressure upon the insertion in the region before mentioned will produce backache. The associated symptoms are suggestive of the condition, and the ones so often attributed to kidney lesions. The chief symptoms are backache with vesical tenesmus. Quite frequently associated with these conditions will be found a laceration of the cervix with ectropion, and associated endocervicitis which will require operative interference, amputation or repair, before treatment is begun on the chronic conditions in the ligaments. Before instituting treatment it is advisable to explain the chronic condition to the patient and the time that will be required before any improvement will be noticed, for the treatment is slow and discouraging, both to the patient and the physician.

The method of treatment in both forms of the chronic variety is, in general, the same. In the hyperplastic variety an attempt is made to promote absorption, while in the atrophic variety an attempt is made to stretch the contracted ligaments.

Vaginal tamponing, if properly carried out, is one of the best means to a cure of sacro-uterine ligament involvement. The patient

is placed in the Sim's or low Trendelenburg position to relieve as far as possible the intra-abdominal pressure and to thoroughly distend the vagina. A tampon of wool or gauze, preferably the latter, saturated with glycerine or glycerine and ichthyol, is firmly packed in both lateral regions and in the cul-de-sac so as to produce firm pressure the whole time the tampon is in situ. When first applied this firm packing may produce considerable discomfort or actually increase the backache. When the patient resumes the erect position, the backache will be relieved for a short time. The tampon is allowed to remain in position for thirty-six hours and its removal is to be followed by vaginal douching with saline solution as hot as the patient can tolerate and in large quantities, never less than two gallons. The bag should not be elevated more than two feet, and from twenty to thirty minutes taken for the douching. The patient is instructed to retire immediately afterwards and on the following morning a tampon similarly applied is introduced. This is to be repeated during the whole inter-menstrual period. Twice weekly, before applying the tampon, the cul-de-sac should be painted with iodine. After a period of at least three months of such treatment the ligaments will be found not so tense or so infiltrated.

Mechanical measures, as the colpeurynter are now used to hasten the absorption and to stretch the ligaments. The patient is placed in the bed with the foot elevated about eighteen inches, a shot or sand bag placed on the abdomen, midway between the umbilicus and the symphysis and the colpeurynter introduced and filled with a pound of mercury. The patient remains in this position for a period of fifteen minutes, increasing the duration of the seance as they learn to tolerate the pain and repeating the treatments thrice weekly. Where it is impossible to carry out such treatment a fair substitute is obtained by the use of massage, which may be ambulatory. The objection to massage is found in the manipulation within the vagina. To overcome this the vaginal finger may be used to put the ligaments on a stretch by attempting to lift the cervix or corpus and manipulation made over the fundus with the abdominal hand. A rotary motion is the most satisfactory. The seance, at first, can only be continued for a few minutes, but is increased as the patient becomes accustomed to the treatment

and the pain following becomes less severe. After the manipulations the vagina is again packed firmly as before described. These manipulations should be repeated twice weekly.

As an adjuvant to the above-described treatment the Violet ray will be found to give satisfactory results. The treatments being given for a period of a half hour and repeated twice weekly. Mercurial cataphoresis and electricity as suggested by several authorities, have not given, in my hands, the same amount of relief as the pressure and stretching therapy as above described.

Garigues, of New York, has recently reported two cases successfully treated by what he terms section of the sacro-uterine ligaments, in which he severed the ligaments close to the uterus, one case by vaginal and the other by abdominal operation. The ligaments were then allowed to retreat as in tendon cutting of the eye, the intervening space being filled up with fibrous tissue.

Lastly, but not least, a carefuly prescribed homœopathic prescription should be employed to hasten absorption and relieve the pain until the ligaments are restored to their original anatomical condition.

DISCUSSION.

DR. E. P. CLARK: The involvement of the sacro-uterine ligaments in parametritis is one that is commonly met with, and one usually overlooked by the general practitioner; because there is no mass to be felt, and little tenderness, with an ordinary examination. Unless he thinks to pull the cervix forward, he will not discover the cause of the backache.

DR. N. F. LANE: The cause of backache in women is usually assigned to a prolapsus of the uterus, or some displacement; but I think that is a mistake. Except in most extreme cases of prolapsus where we have a complete procidentia, the patient will generaly be perfectly comfortable, except for the inconvenience of the protrusion—will have no backache, no pain; and it is, as Dr. James says, only or mostly where these posterior ligaments are involved, where there is an inflammation, that we have the extreme backache; and, as he says, you can prove this very easily by raising the cervix in your finger, put it on the stretch, when you will produce the same pain that she complained of.

In the matter of treatment, I have not made a practice to pack the vagina tightly, as he recommends, for the simple reason that I think they get along faster if we give them little pain. My rule is not to cause those patients very much pain in the treatment. There is no doubt at all that packing the posterior fornix will cause absorption and will touch those ligaments. It does, as he says, give them considerable pain. A very gentle massage is directed, being careful not to give them very much pain, will produce results. I also use, sometimes, Churchill's tincture of iodine as an absorbent, applied to the posterior regions, or a tampon saturated with ichthyol and glycerine; but in all my manipulations I try to give the patient as little pain as possible, and I think they get along better than they do, if you cause them very much pain.

DR. D. B. JAMES: There is really little to add. The object of the paper, of course, is to bring out two points we seem to forget: the particular one being the infiltration in the ligaments; and the diagnosis of the atrophic variety of the chronic condition of the infiltration of the ligaments. They are both pointed out in the text-books, but seem to be forgotten; and my object in bringing up the paper was, simply, to stimulate the thought that in many of these cases that we put down as simply pelvic diseases, the pelvis has nothing to do with it; or, kidney disease, the kidney has nothing to do with it; they may be found to be due to causes located in the ligaments which we often forget.

ENDOMETRITIS.

N. F. LANE, M. D., PHILADELPHIA.

Feeling somewhat more than usual the relaxing effect of the summer months, and casting about for an easy subject with which to entertain this society, I concluded that endometritis would be just the thing. But as I began to work up the subject I found that I had made a grievous mistake, and that the subject selected was anything but easy.

Upon being brought face to face with this situation I have omitted all histological and theoretical considerations and will treat very briefly of the gross and practical side of the question.

Endometritis seems to bear the same relation to the department of gynecology that malaria does to general medicine, viz: when nothing can be found to account for the symptoms present, it is charged up to endometritis. I would not give the impression that endometritis does not play an important role in diseases of women, but it is nowhere as common as is generally supposed to be and the symptoms thought to indicate an endometritis are often the result of lateral disease, polypi or malignancy of the endometrium. In fact, an uncomplicated endometritis of a chronic nature is a rather rare disease.

For all practical purposes we may divide our cases into the acute and chronic, sub-dividing the acute into the gonorrheal and septic and the chronic into the glandular and interstitial; this latter subdivision being superfluous for everyday work. The chronic variety can usually be traced to an acute attack if the patient is carefully questioned and the symptoms and history correctly interpreted. The chronic case, when seen, is often so remote from the acute attack that the connection is easily overlooked.

Beginning with the acute gonorrheal cases we find the symptoms to be quite variable; but the history of an attack of gonorrhea, as indicated by burning urination, foul smelling leucorrhea, discharge of pus from the urethra, an excessive cervical discharge and a somewhat tender and perhaps enlarged and boggy uterus, will point to an endometritis.

Unfortunately if the gonococcus gets as far as the endometrium it seldom stops until the tubes are invaded and then we have, in addition to the above symptoms, backache, pain and heaviness in the lateral regions, with more or less rise of temperature according to the severity of the infection.

While there is no time limit to the invasion of the lateral regions and while there is always danger to the tubes as long as the infecting agent is present in the genital tract, even in a seemingly latent form; still it has been my experience that if the organism does not invade the tubes during the first three or four weeks of an attack of acute gonorrhea, they are likely to escape the infection if the uterus is not interferred with, locally, in an injudicious manner. In this observation I may be mistaken.

Admitting the above to be a fair description of an ordinary case

of gonorrheal endometritis, it seems to me to be folly to attack the endometrium locally with a curette or other like measures, for the simple reason that it is almost an impossibility to determine that the endometrium is infected and the tubes not, and if the tubes are infected it is useless to curette the uterus as the uterine inflammation will usually take care of itself in a reasonable length of time and the traumatism of the curettage may still further spread the infection to the peritoneum.

For treatment I suggest rest in bed, hot antiseptic douches and suitable medication; but unless the abdomen is to be opened to treat tubal complications, the endometrium should be let severely alone. In the subacute or chronic stage the endocervicitis, which usually lingers for an indefinite period, may be treated by an application of four per cent. solution of nitrate of silver or a twenty-five per cent. solution of argyrol. These can be applied without traumatism by using a uterine syringe, taking care not to invade the uterine cavity.

A septic endometritis is usually caused by the introduction of dirty instruments into the uterus or from an infected placental site following labor at term or a miscarriage or abortion. The septic infections are more severe than the gonorrheal, the patient is decidedly ill, feels badly and looks badly and has a higher temperature. I am speaking of the average case. If we compare the two infections during an invasion of the tubes and peritoneum, we find the dissimilarity is still more marked. Often a woman will come to the office with pus tubes of gonorrheal origin, feeling badly, of course, but does not think herself sick enough to be in bed. This is seldom the case when the infection is of what we term septic origin.

The symptoms of the septic infections are usually chill, fever, rapid pulse and discharge from the uterus of muco-pus, or pus, or blood, or possibly all three. There may be, in some cases, little or no abnormal discharge. Sometimes the discharges are offensive and sometimes not, the odor should not be depended upon to make a diagnosis. Locally there may be tenderness of the uterus to pressure, the cervix may feel soft and the os may be more or less patulous. If there are lateral complications the symptom picture will be much altered.

The treatment of these cases will often tax our skill to the

utmost, and physicians are by no means unanimous in their ideas of the proper methods. Probably nearly all of us will agree that when the endometritis is caused by an abortion or an early miscarriage, the best procedure is to thoroughly curette and disinfect the uterus and thus get rid of the infected tissue and the infecting organism. In the latter months of pregnancy and after full-term labor, most authorities warn against the use of the curette for fear of breaking down the barrier that nature throws out to protect the general system from infection.

In treating these cases following labor it has been my practice to first wash the cavity with some antiseptic solution once or twice daily, being careful not to bruise the tissues, and, if this is not followed by prompt results, to explore the cavity with the finger to remove any foreign material that may be there, or to thoroughly curette with a large instrument the entire uterus following with an antiseptic douche or swab the cavity with tincture of iodine. Strange as it may seem, I have seen nothing but good results following a curettage, properly performed, but in the face of the warning of so many obstetricians I would not advocate this method. I am only giving my experience for what it is worth. While it takes the combined experience of many to learn the best, still one is inclined to be prejudiced in favor of a method which has served him well. In the treatment of these infections we are between "the devil and the deep sea," afraid to do it and afraid not to do it. Does not an exploration of the uterine cavity with the finger or a dull curette cause traumatism, breaking down the granulation wall, without the good resulting from a thorough cleaning of the cavity?

Without doubt *most* of these cases *do not need a curettage,* but when we make up our minds that we must explore the cavity for retained secundines or other material, it seems best to me to do the work thoroughly, as with half-way measures we may make matters worse and do not accomplish that which we set out to do.

I have thus treated the subject to bring out the honest opinion of the members of this society in regard to treatment and hope all will speak with frankness when discussing this point.

The chronic endometritis following septic infections is, practically, very much like the gonorrheal in symptomatology and treat-

ment. These patients will have backache, bearing down in the pelvis, many and vague pains in the uterine region, and often these pains are referred to the lateral regions. They are nervous and generally miserable.

The treatment is a curettage.

Much may be done to ameloriate the suffering of the chronic cases by local treatment through the vagina, such as ichthyol and glycerine tampons, local applications to the cervical canal in case of an endocervicitis, hot douches, etc. As a matter of fact cases of endocervicitis far outnumber those of true endometritis and this likely accounts for the fact that these local measures in the vagina so often help cases that have been pronounced endometritis. These chronic inflammations or congestions of the endometrium and cervical canal yield nicely to the indicated remedy when the general health is below par; bringing up the tone of the system and thus aiding nature to throw off the infecting element.

Discharge from the uterus does not, by any means, always indicate an endometritis as the result of these infections; but is often the result of a general, perhaps circulatory systemic disturbance, and will yield to the proper remedy. It goes without saying that no local treatment will avail in such instance: a curettage would, at best, give but temporary relief.

It is impossible to say which of our remedies will help, sometimes it is one and sometimes another, according to the individual being treated. Too much attention should not be paid to the endometritis per se; regulating the function of the stomach and bowels will often do more for the patient than prescribing for the disease.

DISCUSSION.

DR. THEODORE J. GRAMM: I want to point out the fact that the pathology—or, rather, the conception of the pathology of endometritis, has changed absolutely within the last very few months. The point that Dr. Lane makes in the very beginning of his paper, that when no other condition can be diagnosed the situation is very often similar to that which existed years ago when malaria was advanced in the absence of any other condition recognizable; so endometritis has often been advanced in cases where it does not exist at all. Now, not to go over the

subject at all at length, I want to call your attention to the fact that very recently there have been investigations made abroad for the purpose of determining just exactly the pathological condition present in endometritis. The doctor, I believe, classifies endometritis as gonorrheal and septic and chronic, glandular and interstitial. Now, a number of years ago when writing on this subject for the Society (the article was very abundantly illustrated) I made, prior to that time, a very large number of microscopic examinations of curetted specimens and specimens removed in toto; as, for example, by hysterectomy; and in cases where at that time there was present a pathological lesion denominated glandular endometritis and sub-divided as glandular and hyperplastic endometritis and glandular hypertrophic endometritis, I could find no micro-organisms. If the case was one that was classified according to the classification of that day as interstitial, then in some few instances it was possible for me to recognize micro-organisms in the tissues. That fact observed by myself was one that is by no means new, and simply confirms the observations made in very many papers prior to that time.

Particularly abroad, they have lately been investigating the subject again; and it has been found that just that hypertrophic and that hyperplastic glandular involvement of the endometrium is simply a stage of its normal cycle—the normal processes that take place in the twenty-eight days of the menstrual period. The consequence is, when we curette now and examine the specimen removed and we find a large number of glands present, we should not classify that as endometritis if we are speaking accurately; that is to say, inflammation of the endometrium; and the same is true if we find simply enlarged glands, or externally serrated edges, and all those beautiful pictures we take so much delight to make. So that it comes back, after all, to a study of the histology of the endometrium during the twenty-eight days of the menstrual cycle.

I suppose those of you who are keeping abreast of the times are familiar with the fact that to make serial sections in order to determine one single fact concerning this subject, involves an amount of work that is simply tremendous. Imagine a man taking, we will say, one or two cases, and making, we will say,

from five to ten hundred slides in serial sections and examining the processes that he is able to observe in those sections. That is the sort of work upon which recent pathology is founded, particularly in obstetrics and in gynaecology; and it is just this single point that I want to call your attention to—that we must limit ourselves if we propose to be accurate in the use of the term, more and more.

Now, of course, when it comes to interstitial inflammatory conditions, where, for example, micro-organisms are found, then we have an entirely different condition present; and that is, of course, practically a septic case; but all these vague terms that are used will very shortly be abolished, and will be abolished probably in the next edition of the new text-books, so that we should be still more guarded.

The presence of germs of course determines these facts. What is it—what is it, after all, that determines this hyperplastic, hypertrophic condition of the glands of the endometrium? In the majority of instances it may be said that there is an irritation somewhere, very often, in the ovary, or in the tube, or in the uterus, from an interfered function. I mean, for example, the interference with conception which is commonly practiced today, and in sexual abuse. I am not referring solely to the unmarried, but likewise to the married. These are the conditions that produce hypertrophic changes and hyperplastic changes, not by producing a pathological condition, but simply, it increases a normal condition, or condition that is practically normal at some part of those twenty-eight days in between two menstrual periods.

DR. N. F. LANE: I have nothing further to say, except to thank Dr. Gramm for his discussion; because I know he made a very careful study of these conditions, as he says, some years ago; and I have listened to a number of very valuable papers from him on this subject.

REPORT OF THE SECTION OF PÆDOLOGY.

Gastro-Enteritis in Children, by G. M. DeWitt, M. D.

The Role of Systematic Motor and Sensory Training in Certain Mental Diseases of Children, by E. A. Farrington, M. D.

The Fly, the Child's Enemy, by Edwin A. Glenn, M. D.

Measles, by E. H. Hill, M. D.

GASTRO-ENTERITIS IN CHILDREN.

G. M. DEWITT, M. D., SCRANTON.

In taking up this subject, it is an utter impossibility to cover the whole field within the time allotted, but I will try to dwell more on general conditions, causes, care and treatment.

Acute gastro-enteritis, ileo colitis, and later cholera infantum, the former more commonly called summer and autumnal diarrhœa, is a disease due in the majority of cases to a careless feeding of the child, also a lack of intelligent co-operation on the part of the parent, such as unhygienic surroundings, lack of judgment in the selection of food, over-feeding, impure water, uncleanliness, sudden atmospheric changes and injudicious clothing.

The general conditions found are that the mucosa and submucosa become red, swollen and granulated, diminishing the hydrochloric secretions and a promotion of mucous secretions, also the membrane in the intestines take on a similar appearance, impeding the progress of absorption and throwing off mucus and watery secretions.

The glands of these membranes become inflamed sometimes as deep as the muscularia.

Now by the ingestion of food unwholesome, or food in too great quantities, it becomes toxic from imperfect digestion and brings about these pathological appearances and disturb functions just mentioned.

As an infant grows the first year, its stomach increases in size as well, and of course nature calls for more food which is too often given in too great quantities, which food may be improperly

prepared in the stomach for its reception in the intestinal tract, the inflaming the mucous membrane from its poisonous effects, and the bowel contents being every color but the proper one, that being a bright yellow homogeneous mass, whereas in these cases they are of a greenish yellow, dark green or mucoid mass. Usually the first indication manifested by the infant, will be the passing of an offensive flatus, due to fermentation, and if not relieved the incarcerated gas causes intestinal distention with colicky pains, which are due to bacterial ferment, from ingested food loaded with bacteria.

When the stools are unduly green or greenish yellow with much fermentation, odor offensive, containing undigested particles, a hyper-acid stomach is the usual cause.

The color of the stools should be noted at the time of passage, for they will become more green the longer they have been expelled, from oxidation.

The wateryness of the stool is the serum pouring from the intestinal walls, caused by the irritating effects of the undigested food and bacterial toxines, and is nature's way of getting rid of these diseased products, by flushing them out.

Acute gastro-enteritis follows many times a simple diarrhoea, that has been neglected and thus may have been brought on by disturbed digestion, overeating, cold, irritating food and teething. Fright or anger will also cause a simple diarrhoea.

Too much stress is laid upon teething as the sole cause, whereas it may be only contributory, and teething gets all the credit, since the real cause is overlooked.

Dentition does provoke nervous phenomena, which disarrange the body functions very remarkably, but it is unfair to attribute it as the sole cause, as is so many times done. Still the fact of an over secretion of saliva, resulting from the teething process, passing on to the stomach, causing an alteration of the gastric juices, must not be overlooked as a disturbing factor.

Acute gastro-enteritis follows a badly treated or neglected indigestion, or diarrhoea brought about largely with the aid of too much atmospheric heat, insufficient ventilation, or a probable change from mother's breast milk to various foods.

Thus stomach and bowel disturbances very often take on a fatal

character in the second summer or fall, the stools increasing and becoming more offensive, great amount of gas, color green and white—being frothy. As it progresses the mucus appears and increases in quantity. Child becomes peevish and emaciated; the gradual oncoming of this disease does not develop much fever, where in sudden attacks it does, and the evacuations are preceeded by cramps, much gas, straining and tenesmus, abdomen puffed and tender, great thirst, vomiting of undigested food, followed later by mucus and bile. With the great thirst, much water is taken, which is immediately ejected with great force.

Convulsive movements may be the first symptom of anything alarming or the patient may be in a feverish convulsive state.

These summer and autumnal gastro-enteric disorders become very serious if not gotten under control at first, the mortality sometimes reaching in numbers as great as the average brought about by such diseases as scarlet fever and diphtheria.

CARE AND TREATMENT.

Each individual case should be studied carefully and very often taxes the skill of the attending physician. The baby should have a warm bath in the morning, temperature 98-100. If given lower will give him a chill, and if higher it will weaken him, and he is also disposed to catch cold more easily. The daily routine of soaking the little fellow every day is not justifiable from a common sense standpoint, nor from necessity. Of course, soiling from defecation and urination should be strictly attended to and buttox and surrounding parts thoroughly cleansed.

Now the practice of mauling the baby twice a day to give it a bath, especially the ones who object so strenously, evinced by their crying, straining and contortions, is not good sense. Some enjoy it, others take it because its coming to them, and there are a few who strenously object. Now this aversion is constitutional and should not be overlooked, for it is torture to the child and saps his vitality, which can very often be remedied by an occasional dose of sulphur or other indicated remedy.

This ambulatory process that he has to go through deprives him of his rest. Baby should eat and sleep and never allowed to be disturbed only for feeding and keeping his body clean, and thor-

oughly dried. Then if not too debilitated from this wasting disease, have olive oil rubbed well into the skin, or if much emaciated not so vigorously, also a few drops by the mouth every few hours.

Water will hurt no one, therefore the disease products should be flushed out by giving a high enema with a number 10 male catheter. The solution may be saline. Glyco-thymoline, one ounce to the pint is very efficacious and gives most excellent results. These flushings to be given from two to four times a day, as the occasion requires.

Feeding is a very important factor, and if it were not for the anxiety on the part of the mother, that baby is starving if he does not get his fill every two hours or oftener, it would be well in the beginning to give him nothing but cool fresh water, thus giving those poisoned and overworked membranes a good rest, also cleansing them and giving them a chance to resume their normal functions.

The nearer one gets to nature the better it will be for the patient, *i. e.*, on observing how animals work out their salvation when ill, at which times they refuse all nourishment until the disease has spent its force and has been eradicated, then they gradually get back to their former ways of eating.

The fact is the babies either get too much, or the food is unclean. Give them plenty of good fresh water and if they vomit it, give them more and keep it up, for that process can do no more harm than clean out the stomach, and what is retained will go on into the bowel and be absorbed, and what is left will help flush it out. It is simply a "cleaning house" proposition coupled with a good rest. Sometimes it is well to give sips of hot water and they are relished and retained. On the other hand pieces of ice in a little gauze bag to suck on is very soothing in highly feverish states.

MEDICINAL TREATMENT.

This, of course, is a matter of study of the symptoms and conditions. The remedies used fifty years ago are just as good today as they were then, if properly applied, maybe better; for we ought to know more about them now, with the opportunities to improve ourselves, which we have in these later days, than they had of that period.

I will not attempt to give a series of remedies applicable to this disease, for we must individualize our cases and search for the "Similia" suited.

There is, however, one remedy that does help one out in exceedingly troublesome conditions, familiar to all, but not always prescribed, probably thinking it not the indicated Similia.

That remedy is Rhus Tox.

SYMPTOMS.

Headache and confusion—noises in ears.

Sad, depressed, anxious about condition and very weak. Apathetic, shuns speaking.

Nausea, vomiting and violent thirst, bad taste, Rhus tongue.

Abdomen bloated, rumbling, soft, painless on pressure but painful on fluctuation, due to incarcerated gas, not fluids.

Coldness of arms, cheeks and forehead, with much thirst. A feverish full face. Hands cyanotic.

Very frequent, greenish white, stinking liquid stools—often involuntary. Tenesmus and colic. Urine of very dark brown color.

In looking through the August number of the Homœopathic Recorder I found some cases cited where remedies supposed to be the Similia were prescribed but the results had been very unsatisfactory until Rhus was administered. In these cases the writer it seems finally came to the conclusion that it was an epidemic remedy, *i. e.*, for that particular period, and suited nearly all the cases at that time where no other seemed to give the least satisfactory result.

Now babies and children with many of the above symptoms, such as the coldness of the arms and face, hands may appear somewhat cyanotic and abdomen tympanitic. Rhus has done much for these infants, especially when debility is pronounced and the frequent passing of stinking liquid stools. When other remedies seem to be indicated but fail to relieve Rhus will quite often be found to be the "Similia" at the stage when these symptoms and conditions are present. The physician has a more difficult task when prescribing for infants and children than for adults, because of the absence of the subjective symptoms, so will cite a recent adult case having the symptoms mentioned.

Mrs. B., aged 65, farmer's wife, strong, wirey, had usually good

health until a little over a year ago when taken down with pneumonia, recovered, but resumed her duties too early, therefore never thoroughly convalesced.

Living some six miles back of Honesdale, Pa., the only medical attendance received was an occasional visit from some of our Allopathic brethren of that place, but she did not improve in any form, on the other hand gradually lost in flesh and weight, could not retain the medicine, vomited, had severe spells of diarrhœa, and when I was called in she was apathetic, non-communicative, and would not answer questions asked, until she had consumed a certain amount of time, *i. e.*, took her own time to do so. Was weak, anemic, tympanitic, thirst, desired things cold, vomiting of bile, bowel movements were very loose, with the never-get-done feeling, mucus and bloody.

Prescribed Chi. Ars. (Debility) 3x, one teaspoonful every hour—showed some improvement; diarrhœa stopped, but she broke over the traces and ate oatmeal, later some green corn; diarrhœa immediately set in with redoubled vigor, with more mucus and blood. Had prescribed Mer. Cor. 3x, but patient was not getting the relief she should, so when called over the next week, prescribed Rhus 2x., and three days later her son-in-law reported that all her troubles had about ceased. The terrible debility had disappeared, no mucus, no blood, no vomiting. When I saw her last she looked as if 25 per cent. of her former self was missing, being more emaciated and anemic than she was the two weeks before when I saw her. Also her muscles had become exceedingly flabby. Now Rhus being a common remedy is often overlooked, however, it seems to be the "Similia" in this type of cases, which worry practitioners extremely. It is wonderful what the indicated remedy will do and how quickly the patient improves. Many claim the majority of cases will get well without medicine, let that be as it may, or may not be, we do know from experience that after prescribing according to the symptoms manifested by the patient, there is often a sudden change for the better which the remedy has produced, co-operating with nature, and has come to her aid, therefore it is unfair to give nature all the credit, as some poor prescribers are wont to do.

THE ROLE OF SYSTEMATIC MOTOR AND SENSORY TRAINING IN CERTAIN MENTAL DISEASES OF CHILDREN.

E. A. FARRINGTON, M. D., HADDONFIELD, N. J.

As physicians, in the broadest sense of the term, we are concerned not only with the alleviation of pain and the cure of disease, but also with the upbuilding of health and the improvement of bodily efficiency. To obtain satisfactory results in this work it is necessary to begin with the child, and we are thus called upon to solve problems and deal with conditions that are closely related to the field of education. The most important problem to be met in this connection is that of the development and training of the motor and sensory apparatus. In perfectly normal and healthy children this development may without great harm be left to itself, for motor activity and co-ordinative control come spontaneously with the common games and plays of childhood, and sensory development is unconsciously brought about by contact with the child's environment. But even if this be true systematic training of these activities during childhood is of the highest benefit in after-life. We are accustomed to educate the voluntary muscular system: the usefulness of this procedure is universally admitted. But the sensory apparatus is commonly much neglected. Professor Charles W. Eliot, in discussing Education for Efficiency (Riverside Educational Monographs, 1909, p. 60) says: "The training of sight, hearing, smell, taste and touch has been neglected in education to an extraordinary degree. Quickness and accuracy in all the senses are of high value to the individual throughout life: and in innumerable cases some slight but unusual superiority in one or more of the senses becomes the real basis of success in life."

If this training be necessary for the normal child, how much more is it necessary for the child whose physique is impaired by deformity or disease and whose motor and sensory mechanisms are rendered inefficient by weakness or defect?

In no class of cases will the physician be called upon to utilize his best knowledge upon this subject more adroitly than in those

mental affections of childhood commonly grouped together under the name of mental defect, or, as it is better styled, mental subnormality. Mentally subnormal children very rarely show any spontaneous tendency to clearly co-ordinated muscular or sensory activity, and yet the prognosis of such cases must be based almost wholly upon the possibilities of development of the sensory-motor system. Failure to recognize this fundamental fact has brought about permanent defect in many a subnormal child who might otherwise have been made a useful member of society.

In all forms of mental subnormality it is a familiar axiom that "after treatment comes training." It is the physician's duty, therefore, when acute symptoms have subsided and chronic conditions have been controlled, to prescribe a suitable and adequate system of training to meet the requiremtnts of the sensory-motor apparatus, and it is the purpose of this paper to outline a series of exercises of this kind that have been found particularly useful in dealing with the class of cases in question.

These exercises are based largely upon the experience of the founder of the Bancroft Training School, who has studied the problems involved in this subject for more than twenty-five years. The exercises have been shown to be of value in all forms of mental defect, whether due to inherited conditions or acquired diseases. They are especially useful in cases of cerebral or cerebrospinal meningitis, encephalitis, intracranial hemorrhage or other conditions accompanied by some form of hemiplegia. In children of the malnutritional type also, where rachitis or marasmus has occurred in early life, much can be accomplished. Cases belonging to the hypothyroideal group, such as mild cretinism, mongolianism, certain forms of obesity, etc., are all greatly improved by these systematized motor and sensory exercises.

One of the fundamental principles of this system of training is that all motor and sensory activities are, for the purposes of development, considered to be purely physical. They are treated simply as physical exercises. We are accustomed to think of muscular activity in this way, but the connection between the senses and such psychologic faculties as attention, association, memory, etc., and their close correlation in text-books on psychology has led us commonly to regard sensory phenomena as being psychologic rather

than physiologic and as involving mental rather than physical states.

While it is true that this relation between mental faculties and physical functions is remarkably intimate, so intimate in fact that the latter may be exercised and developed by training the former (the method usually followed in our kindergartens), nevertheless in mentally subnormal children this connection must be temporarily lost sight of, if the best results in motor and sensory training are to be gained. The organs of special sense, the afferent nerve-pathways, and even the sensory centres of the cerebral cortex may be *exercised* by appropriate means, although the child may be totally unconscious of their nature and significance. The nutrition of the structures involved may thus be improved, their tissues developed and their functional efficiency raised, exactly as we are accustomed to see done with the muscular system in the gymnasium.

Motor training by means of graded and systematized floor and apparatus work in the gymnasium is of the greatest value in the development of subnormal children. Many of them are able to do only light work, but this can be carefully selected and applied, so that the structures in need of particular attention may receive it without overtaxing the nervous, circulatory or other systems. Hemiplegic cases may be given special exercises for the affected side, foot, leg, trunk, hand, arm and face exercises being included. In addition these cases may have corrective work in the form of passive movements, massage, and if possible vibratory and electrical treatment. Series of simple exercises may be worked out, adapted to the peculiar needs of each child, and these may be so selected that they may be carried on in the home with only the simplest possible apparatus.

All of these methods of motor training are so familiar to the physician that they need not be dwelt upon here. There are, however, a few special exercises that deserve mention. In diplegic or marked hemiplegic cases it may be necessary to spend much time in training the child to walk. This has been accomplished with good success in our school by a device composed of head and shoulder straps attached to a tackle running upon an overhead bar or track. After placing the child in this apparatus so that the feet rest fully upon the floor, it may be necessary for the instructor to move the feet and limbs, imitating the movements of walking. This should

be persisted in daily until the movement becomes spontaneous. It is remarkable what may be accomplished in this way if time enough is allowed.

Another walking device consists of a platform about fifteen feet long and two feet wide, raised five or six inches from the floor. At appropriate intervals in this platform oblong holes are cut through to the floor, in such manner that they are adapted to the angle of eversion of the foot and the length of the step while walking. They are lined on the sides with wood and look much like footsteps in deep snow. The child is required to walk over this platform, placing the feet in the proper holes. The exercise requires the feet to be lifted several inches at each step and helps to overcome the dragging of the lower limbs so common in paralytic cases. Still another apparatus is composed of a plank two inches thick and ten feet long supported on edge about a foot from the floor. The child is required to walk along the edge of this plank with little or no assistance and is thus encouraged to co-ordinate the muscle-groups involved in the maintenance of equilibrium. Spontaneous hand, arm and shoulder movements, particularly of the co-ordinative type, are often difficult to develop. Even the simple act of prehension is sometimes wanting. The muscles involved in the grasping movement may be developed by a special form of glove containing stiff rubber elastic bands attached to the back of each finger and fixed firmly by a wristband. These bands act a little like the extensor muscles of the fingers and wrist, the flexors being required to contract against resistance. Grasping may be elicited by offering the child an object that arouses interest, such as an apple or a toy.

Lifting and carrying heavy objects, if systematically performed, is a most useful form of elementary motor training. The best objects for this purpose are some round cobble stones about six inches in diameter, some Roman bricks and a few wooden cylinders measuring six by ten inches. These are all heavy enough to necessitate the use of two hands. With these objects a series of exercises consisting of simple lifting, lifting and placing, carrying to a definite spot, piling, building, etc., may be worked out that can be taught to any subnormal child who is able to walk. This training lays a foundation for the finer co-ordinative exercises of block-building, clay modelling, etc.

The more complex motor activities may be developed even where physical stigmata are marked, by careful attention to suitable apparatus and by persistence in regular exercise. Simple and complex peg-boards, sewing-boards, weaving-boards, etc., are all of great value. All of these objects should be very large. The common apparatus used in the kindergarten is too small even for the normal child and is quite useless in the hands of the subnormal. The pegs for peg-board work should measure not less than $2\frac{1}{2}$ inches in length and $\frac{1}{2}$ inch in diameter. The child should be able to grasp them with the whole hand. The sewing-board consists of a light pine board 14 inches square in which are several rows of $1\frac{1}{2}$ inch holes well reamed out on both sides. The child is taught to pass an 8 inch wooden needle "threaded" with soft $\frac{3}{8}$ inch rope, in and out of these holes, imitating various stitches. A child who would find it impossible to take a single stitch with an ordinary needle will learn to use this board in a few weeks, and by changing to smaller apparatus will eventually be able to sew very well.

The weaving-board is a 20 inch frame covered with $1\frac{1}{4}$ inch webbing, stretched tightly across in one direction only. The child is taught to weave a long flat needle in and out across the bands of webbing, drawing through detached strips of webbing, the final result being much like a very large kindergarten mat. The webbing may be dyed to form appropriate combinations of color.

The value of these forms of co-ordinative motor training lies not alone in the fact that they develop the motor apparatus, and help the child to acquire facility in the complex movements necessary in daily life. They are also important because of the relation between motor activity and mental growth. They stimulate nutrition in the motor areas of the cerebral cortex, wake up the gray cells of the cerebellum and encourage the formation and active functioning of association fibres. They thus indirectly aid in the development of memory, thought, will and other mental faculties. Dr. Boris Sidis is of the opinion that motor elements form the nucleus of consciousness. He says in this connection: "Motor consciousness forms the main body of our mental activity. * * * * The great majority of mankind still leads a life closely allied to animal sensori-motor states. Instance the delight of children in their play and the all-absorbing interest of college students in their baseball and

football games. Even in the highest and most developed forms of mental activity, motor ideas and representations are by far the most predominant. Without motor elements ideational life is arrested. It is these sensori-motor and ideo-motor elements that constitute the stream, the flow, the current of our mental life. Motor elements enter freely into combinations with all other elements of mental life." ("Analysis of Sleep." Boris Sidis, Boston, 109.)

The training of the special senses is best carried on by drilling one sensory mechanism at a time. Keeping in mind that the chief aim is development of the physical structures, the exercises and apparatus are to be selected with a view to excluding as far as possible every apperception, association or memory-concept except those related specifically to the sense under training.

In training the visual sense the aim should be to develop speed and accuracy in the recognition of form, color and arrangement. For this purpose the following objects are selected: a sphere, a cube, a cylinder, a pyramid and a cone. These objects should be of good size (not less than three inches in the smallest dimension). They should be of one color, and if color-training is associated with exercises in form, a set of models in each color should be provided. A square of dull black felt should be at hand as a background for the objects. Geometric forms are selected for these exercises because they are almost entirely without asssociational relations in the child's mind. The results of the training are thus due to the exercises only and not to associated memories, and the progress of the work can hence be safely measured.

In the first exercise a white sphere is placed upon the square of black felt, hidden beneath an appropriate cover. The pupil is seated about 30 inches from the object and is required to name it after it has been uncovered a short time and then re-covered. The other forms are treated in like manner the period of exposure being shortened as the pupil becomes familiar with the exercise. The color of the objects may be varied, and several models may be used in a group, the order of their arrangement being changed. When these exercises can be readily performed, correlation with familiar objects may be introduced, and similar exercises with other objects attempted. These exercises afford an efficient training for the visual apparatus, not only as regards the retinal and central structures, but

also the mechanism of accommodation. Children who cannot even talk will in time learn to recognize the objects and will show their recognition by pointing out a similar object in a group of forms.

In training the color-sense the hypothesis of Hering has been adopted as a provisional basis for the exercises, this being the theory that seems to come nearest to covering the facts. The accuracy of all of Hering's conclusions may perhaps be disputed. Nevertheless in practice the application of his general theory certainly appears to accomplish results. Hering's three chromochemical substances are accordingly made the basis of the color-training, and the exercises are planned to develop their quantity, activity and distribution. The color-pairs, green-red, blue-yellow, and black-white are used at first separately, the anabolic and catabolic colors being alternated. Later they are used in combination, and the training carried on to a series of carefully graded exercises in the recognition of the six fundamental spectral colors, and the differentiation of their respective hues, tints and shades. In these exercises the old color theory of Brewster, involving primary, secondary and tertiary colors, is discarded for the more rational classification based upon the spectrum.

The auditory sense is developed by systematizing various sounds. Different instruments, such as the bell, rattle, horn, drum, triangle, etc., are utilized. The child is first taught to make the sounds himself. He is next required to listen while they are repeated without his being able to see their source, and he is then directed to indicate upon which instrument the sound was made. Many exercises may be introduced in this way. The chief points aimed at in the training are the accurate recognition of quality, intensity and pitch.

Gustatory and olfactory training are carried on together. The four gustatory fundamentals, sweet, bitter, salt and sour are first developed; then a large number of stimuli are introduced, the most vivid and striking being used first. A surprising degree of skill in detecting shades of difference may thus be obtained. The child is, of course, to be blindfolded during the exercises, and is required to depend entirely upon the sense under training for his conclusions. In gustatory exercises it is well to select stimuli that are non-volatile, as the possibility of recognizing the substance by simple olfaction is thus minimized.

Pressure, muscle, stereognostic and temperature-senses, which, in combination with pain-sense, are commonly grouped together as "touch," should be trained separately.

Pressure-sense is developed by teaching the pupil to recognize such differences in objects as rough, smooth, hard, soft, elastic, etc. The exercises are performed by introducing two or more objects into a small cloth bag and requiring the child to insert one hand and select, by means of pressure-sense only, the rough, or smooth, or hard object, as the case may be. These objects should be alike in every respect except the particular quality to be studied. In this way the pupil may finally be taught to make comparatively fine distinctions, such as recognizing raw cotton, raw silk, wool, hair and fur, and differentiating cotton, woolen, linen and silk fabrics of various kinds.

Muscle-sense may be readily trained by utilizing pairs of objects, each pair being of different weight. The best results have been obtained by using large cubes and pyramids (with square bases) colored white and carefully loaded with lead so that a cube and a pyramid constitute a pair, each object of the pair equal in weight to the other but differing noticeably from the other pairs. Bottles painted white on the inside and loaded with shot set in paraffin, or, in fact, any other suitable objects can be employed. The chief points to be remembered are that the objects must be so constructed that they form equaly weighted pairs, each pair differing from the others in weight, but resembling them in every other respect. All the objects are set before the child and he is required to separate those of equal weight into their respective pairs. This he can do only by lifting the objects and measuring their weight by his muscle-sense. The exercises may be multiplied indefinitely. If cubes and pyramids are used, the pyramids should be set upon the cubes of like weight; the pupil may then be taught to arrange the pairs in a row, the heaviest at one end, the lightest at the other. These blocks or bottles may be utilized in developing the appreciation of weight by pressure sense. The exercises should be the same as those above mentioned except that instad of grasping and lifting the objects they should be placed upon the upturned palm. In these exercises the back of the hand should rest upon the table in order to eliminate as far as possible muscle sense, which under ordinary circumstances

is combined with pressure-sense in the estimation of weight. For training more extensive muscle-groups with heavier weights, tightly covered baskets, alike in every respect, but differently weighted with pebbles, may be employed. For example the pupil may be directed to select the heaviest basket from a group of three and carry it to the teacher.

Stereognostic sense may be brought to an excellent degree of development by placing in the black bag above mentioned several small objects which the pupil is required to recognize by introducing the hand into the bag and examining the shape of the objects with the fingers. It is best at first to select geometric forms, such as the sphere, cube, cylinder, etc., using only three or four at a time. Later common objects of many kinds may be employed with advantage. The game in which the children are blindfolded and made to name various large objects such as the furniture in the room, etc., is also a useful exercise in stereognosis.

The apparatus for the exercise of temperature-sense consists of six or eight vessels of similar form and color. Ordinary white enamel pint cups serve the purpose well. These vessels are to be filled with water of different temperature. Two vessels should be used at first, one containing hot water, the other cold. When these have been made familiar to the pupil a third may be introduced containing lukewarm water, and finally the cups may be filled in pairs and the child directed to group them properly according to their temperature. The possibility of the pupil recognizing the difference in the vessels by their appearance, position or the amount of water in them should be carefully guarded against, so that temperature-sense will be the only sense available.

It is to be understood that in all the exercises described above where the hand is employed, first one hand and then the other is to be exercised. When possible both hands may be brought into play.

The exercises here described afford but an imperfect idea of the scope and varied usefulness of motor and sensory training in the development of the mentally subnormal child. Some physicians have thought such training a foolish waste of time and energy, but this has been because they were not in a position to observe results. It is difficult to believe that a year's persistent and systematic application of the exercises here described can so fully arouse the slug-

gish and uncertain mental faculties of almost any one of these children. Interest awakens, perception becomes sharpened, memory grows active, association broadens, voluntary control on every plane begins to assert itself. The impulse to make something, to perform some deed, to win some goal, to accomplish something worth while —the great push and urge toward constructive activity—all these may be seen stirring into life under the hand of thorough training. Nor is the training difficult. The application of a few general principles, if properly made, will enable any physician to work out exercises applicable to his case, that can be performed under his direction by a teacher or relative in any home not actually poverty-stricken.

Of course, miracles are not to be expected. Many cases improve so slowly and some so little that great achievement cannot be claimed for them. But the majority of cases—and there are thousands scattered over the land—can be brought to a level of activity and usefulness by such training not only above the expectation of the physician but beyond the hope of the parents.

DISCUSSION.

DR. O. S. HAINES: I have nothing much to say except that I have been very much interested in Dr. Farrington's paper, as I have been interested in several other papers, relative to defects of children. I really feel incapable of discussing the subject; but I have seen some of the results of that sort of training spoken of in my own practice; and I hasten nowadays to send cases of that kind, as quickly as I can and as young as I can, to a proper school where the simple methods would seem, in the reading or in the statement, to be hardly worth our consideration to produce such results. I can testify to the results.

DR. MILLIE J. CHAPMAN: I want to express my appreciation of the paper, and to say that I have had considerable experience in this method of treating children of slow development, cretins, and others of defective mental states.

There are children were the circumstances are such they cannot be removed to a school or institution, and still you may secure material toward educating them in this line at their own homes. I have not only used it for children of this kind, but also in aged

persons who were suffering from mental failure and paralysis and paresis, and such cases. The occupation and the entertainment of them is profitable, even where there is no development. I have seen not only children from three to five years old, but also men and women past seventy-five or eighty, with whom the use of the blocks and the cards, or objects of different colors, the rubber ball articles of this kind, in many cases seems to brighten and benefit the mental condition, and certainly made it much easier to care for them.

In the past few years, I have had several cases of cretins, one who was three years old, and would lie as helpless as though just born. You could lay that child on the lounge; it would not turn nor move in any way; but after about six months' care and treatment she would crawl across the floor with the rapidity of any child beginning to creep, and after a year's treatment walked and brightened and was improving markedly, when the death of the mother, and, later, that of the father, resulted in the placing of the child in an institution for the feeble-minded; which, in that case did not prove to be a school. It was only a place where she was fed and clothed; and the tending and care ceased at her admission. This was a great disappointment, because of the great improvement that had followed these methods.

Question: Is there an institution in Pennsylvania for the care of cretins and mentally deficient children?

DR. D. P. MADDUX: Yes, sir, there is an institution at Elwyn, a State institution, for that purpose; but I do not think the training is as thorough as that which Dr. Farrington outlined.

There is one at Polk for the epileptic and feeble-minded.

DR. E. A. FARRINGTON: I am glad the question of schools came up because it gives me an opportunity to say that the crying need in regard to these children is schools, or State institutions; and there are a great many that are good in their way but they are not schools except in a very limited sense of the term. They are simply institutions for the care of these children; and it is quite impossible for them to care for even 20 per cent. of the children that exist in the State; and I think that is true of every State in the Union. Out of about 1,100 children that are at the present time in the Minne-

sota State institution, a few over 400 are in the school. That is a very good showing. Out of some more than that; (I forget just how many) some over a thousand at Elwyn, near Media, and in the suburbs of Philadelphia, only about 300 are in the school.

What the doctor has said about the dropping of the training is, therefore, almost certain to take place when the child is sent to the average institution. That is not the fault of the institution because these places are not large enough to take care of all the children that are sent to them; they are limited as to funds. Perhaps 30 children are compelled to be taken care of by a single attendant. Now, no single person, no matter how competent, can take care of 30 children; no teacher, however competent, can teach 40 or 50 of these children in a single class. That is as many normal children as any teacher should undertake.

These children have to be taught individually; and I would like to make a plea for the home care of these children. They ought not to be sent to an institution; they ought not to be sent to institutions as long as we run our institutions in the way they are run at the present—as long as they are simply places where these children can be cared for until they die at as cheap a rate as possible. They are much better off at home; and there are few homes—only those where absolute poverty obtains—that cannot train the children very much better than they are trained in our State institutions. It can be done in the home; and if our physicians will familiarize themselves with the methods of training, they are not especially difficult of application, but they need to be employed persistently. It is not so much depth of knowledge as simply willingness to stick at the case, that will produce results which will more than repay every effort. Sometimes it seems like an awfully slow process; sometimes like an absolute waste of time, and perhaps the parents will get very much discouraged; but if the training is adhered to long enough, the results will absolutely appear.

Children may go on without talking; which is something that particularly bothers the parents, and which they find very disturbing; the parents appeal to the physician. "Can't you make this boy talk? Here he is, just two years old, and he doesn't even say mamma." It is remarkable what motor-sensory training will do in the way of developing speech. Mere exercise in articulation will

not do half so much as systematized general motor and sensory training; I want to emphasize, especially, sensory training. This same training would do normal children a great deal of good. How many of us are acutely developed as regards the sense of smell and various types that are called crude, as touch; and with these children, every effort that can be made to awaken cortical areas should be made; and every effort brings about its results.

The work that we have done in our school has been a sort of experimental work along this line. We have had the opportunity to experiment with a limited number of children, less than fifty; but have been able to do intensive work; and as the result of a good many years, we have worked out these various forms of apparatus. Some of them are used elsewhere—many of them, in fact; some of them are not used anywhere else. I have visited a number of our schools, all in fact in the country east of the Mississippi; and they do not, many of them, make any attempt to do the whole of this kind of systematized work; and yet it is so easy that any physician can carry it on in any home.

THE FLY—THE CHILD'S ENEMY.

EDWIN ATLEE GLENN, M. D., BERWICK.

There is a bromidion to the effect that "an ounce of prevention is worth a pound of cure." Transcribed into medical parlance, "An ounce of prophylaxis is worth a pound of therapeutics." As a matter of fact, it is worth much more, for the subject of prophylaxis has loomed up to such gigantic proportions that it is perhaps the great medical question of the day, and in pursuing this subject we present the strange anomaly of a body of trained men whose very work robs us of our own profession.

Now, we of homœopathic faith, who hold the removal of the cause as one of our main tenets, should feel an especially keen interest in the subject, and when the omniverous bacteriologist trains his microscope upon this, that and the other possible source of infection, and finally hails the common fly before the bar of justice with a great mass of incriminating evidence, we should be the first to

listen attentively to the indictment and pass the sentence of extermination upon the criminal.

For the fly is no longer regarded as the annoying, but harmless creature of our nursery rhymes; on the contrary, it is now considered and labeled the most dangerous animal in existence. If you please, a villain of the deepest dye.

Nor is it to be wondered at. In the first place, it comes of a bad family. It belongs to the order Diptera, or two-winged insects, an order which comprises among others such notorious pests as the mosquito, whose death knell has been tolled on the charge of hypodermic injection of pure cultures of malaria and yellow fever, the prarie midges, fungus gnats, gall gnats, clover seed and wheat midges, Hessian fly, Buffalo gnat, Turkey gnat, Adirondack black fly, horse fly, ox warble, sheep bot-fly, horse bot-fly, flesh fly. Then we come to the house fly's immediate relatives, the sub-family Muscinae, the stable fly, the horn fly, the screw worm fly, a metallic green fly infesting carrion and possessed of the disagreeable habit of laying its eggs in open wounds and sores of both man and beast, and the Blow fly. Then there are also the cabbage, apple and cheese magots, and the louse fly.

Such is the house fly's family tree. It sounds like the roll call of the entomological rogues gallery.

Now, the common fly, Musca domestica, breeds in filth, mostly in stable manure, but also in all kinds of excrement, carrion and garbage. The eggs hatch and the larvae becomes full grown in from five to seven days, and the pupa state lasts from five to seven days longer; so that a fly reproduces its kind in from ten to fourteen days. A female lays from 120 to 140 eggs. It is possible, therefore, under favoring circumstances, in a breeding period of three summer months, assuming, for the sake of calculation, that the males and females are equal in number, say sixty and sixty with each litter, it is possible, I repeat, for the progeny of a single fly to number over three hundred and forty trillion individuals. Is it any wonder that flies are numerous in late summer!

The structure of the fly seems almost diabolically adapted to the purpose of carrying contamination and infection. The legs, as you can see in this feeble representation, are many jointed and teem with bristles extending in every direction. A more perfect

instrument for the accumulation and transmission of whatever noxious substances it wallows in could scarcely be devised. The proboscis, head and thorax also are copiously furnished with bristles. The whole fly, consequently, can easily reek with germs.

That such is actually the case has been amply proved at the Connecticut Agriculture Experiment station, where an enumeration of the bacteria found upon the bodies of over four hundred flies caught about a garbage barrel yielded an average of a million and a quarter. And when we realize that typhoid bacilli can exist in the feces not only during the attack, but as well for some time before the disease is recognized, and often for long periods after apparent recovery (witness "Typhoid Mary" of nauseous fame) we can readily appreciate what an amazingly prolific source of infection the fly may become.

So intimate, indeed, is its connection with the spread of this disease, that Dr. L. O. Howard, chief of the United States Bureau of Entomology, urges the popular use of the term "Typhoid Fly" in lieu of the present "House Fly." Much good would doubtless be accomplished in fostering the repulsion which the popular mind should entertain toward this pest. If each of us here would accept and use upon every convenient occasion this opprobious term, "Typhoid Fly."

That tuberculosis as well may be disseminated by the fly has been demonstrated by Dr. Lord, of Boston, whose investigations reveal the fact that a fly can ingest tubercular sputum and excrete tubercle bacilli that retain their virulence for at least fifteen days.

The relation of flies to intestinal diseases other than typhoid, particularly those causing the high mortality rate in children, is strikingly exhibited in the investigations which Mr. Daniel Jackson, City Bacteriologist, carried on for the Merchants' Association of New York city. He demonstrated beyond a doubt that the death rate from these causes followed absolutely the increase, culmination and decrease in the prevalence of flies.

All of this, then, has a most important bearing upon the child for the child is helpless in the selection of its food, being guided only by the sense of taste. And a glass of milk may taste just as good after a fly has had its bath in it, although that milk may be liquid typhoid fever. An apple may still have its delights, although

specked with myriads of deadly tubercle bacilli. A piece of bread spread with molasses may still tickle the palate after a fly has been dragged from the mire, even though that bread may be a virulent culture of cholera infantum.

It is up to us, therefore, to safeguard the child by exterminating this death carrying enemy of the race. How can we do it? We can do it by working each in our own sphere of influence to overcome the disgraceful and fatal national lethargy with which the public is prone to regard such vital subjects; by popularizing the term "Typhoid Fly"; by insisting upon closed receptacles for garbage and the removal of all garbage at least weekly before the eggs can develop into mature insects; by urging the abolition of all open closets; and finally and most important of all, by demanding that all stable manure be either screened, disinfected, or removed weekly.

By so working we can each of us assist in hastening that infectionless millenium, when bacteria cease from troubling and bacilli are at rest.

MEASLES

DR. E. H. HILL, PITTSTON.

Measles was described by an Arabian physician in the ninth century and was believed by him to be a mild form of smallpox. Sydenham separated it from smallpox in the seventeenth century. Although measles is such an ancient disease, modern medical science has not robbed it of all its dangers. Osler states in the last edition of his practice that the mortality rate in private practice is 2 or 3 per cent., and in institutions 8 or 10 per cent. Our state registrar furnishes the information that there were 1221 deaths from measles in Pennsylvania in 1908, giving a death rate per 1,000,000 of 17.4 per cent. Such facts would lead us to the conclusion that measles is not always a simple proposition. It occurs to me that some of the eminent medical scientists had better get busy and discover an antitoxine with which to treat measles more successfully, or better still, that all physicians treat measles according to homœopathic principles.

I learned the nature of measles 17 or 18 years ago, when I

treated a great many cases, some patients above 70 years of age. All were seriously sick and indeed, some died. Do you remember when you had the measles? If you do and you had the real old fashioned type, you will keenly appreciate this very minute how you suffered from that unquenchable thirst; that unappeasable restlessness; induced by the nerve tension; the intense inflammation and irritation of the skin; the high temperature; the dry mouth; the painful, unsatisfactory cough, and the very ugliness of your countenance as viewed by you in your mirror.

Measles is an acute, infectious and contagious disease generally met with in children, rarely under the sixth month, but sometimes attacking adults of all ages—indeed it is more prone to affect adults than is scarlet fever. There are many more people immune from scarlet fever than from measles, and recurrences are common—even 3, 4 or 5 attacks may occur in the same patient. The sexes are about equally affected. No causative organism has been discovered. The contagion is communicated by the breath and the secretions, particularly the secretions from the nose and upper air passages. It may be conveyed by a third person. The stage of incubation is about 12 days, but it may be more or less. The introductory stage may be only one day, or may be prolonged to five or six. Usually rash appears on the fourth day, occasionally on the first day, particularly if a severe chill is the introductory followed by sharp rise of temperature. Usually, however, measles begins with feverishness, coryza, suffusion of the eyes and photophobia, and usually within 24 hours a dry, hard cough of peculiar character develops. This is a perfect picture of a severe catarrhal cold. But one will soon realize that although the fever may have dropped (to return again in greater fury about the fourth day when the rash appears) the coryza is more marked and the cough on the increase. Indeed this cough may be so characteristically measly that a positive diagnosis can be made within the first 24 or 48 hours; for the true measles cough has no duplicate and once heard, will never be forgotten. Usually the patient is not very sick until the fourth day when the fever rises sometimes to 105° and rash appears on some part of the face, gradually involving the whole cutaneous surface. Often the advance of the rash is so

gradual that by the time the feet or hands are involved the rash on the face has faded perceptibly.

It will be unnecessary to attempt to describe minutely the character of the rash, as we are all familiar with it; but it is well to remember that sometimes it is of such a character as not to be characteristic. This rash usually reaches its acme in two days, and during that period the constitutional symptoms are most intense. Then there is a period of 24 or 48 hours of quiescence when more or less rapidly, about the 7th or 8th day, the fever abates, the rash disappears and the patient is convalescing.

Desquamation begins as soon as the rash fades away, and consists of branny scales, hence unlike the desquamation of scarlet fever, and lasts about 10 to 15 days. Unlike scarlet fever the contagion does not reside to any great extent in the scales from the skin, but rather is more virulent in the catarrhal exudates.

The cough usually becomes softer about the sixth day and then gradually abates. If on the seventh or eighth day at most the temperature does not abate, the cough get softer and the general constitutional symptoms lessen, we may be sure of some complication, which is only too apt to occur—probably a broncho-pneumonia, an otitis media or membranous laryngitis.

Other types of measles than the type above described are sometimes met with. Often the eruption is exceedingly faint, fever but slight, and catarrhal symptoms very limited—so mild is the disease that a diagnosis is difficult. Very rarely is the hemorrhagic type, the so-called black measles, seen in private practice. In homœopathic practice this type does not prove as fatal as it is popularly supposed to be. Malignant measles, characterized by great intensity of all the symptoms, is rare.

Our interest as physicians in any case of measles should not abate until every possibility of a complication has been removed. Indeed our skill is more often required in the treatment of the complications than in the treatment of the disease itself, for who cannot prescribe successfully for the measles when uncomplicated? Bronchitis is a part of nearly every measles attack, but a broncho-pneumonia is a complication often requiring great skill for its successful treatment. Lobar pneumonia may rarely be met with. Catarrh of the pharynx is also a part of any attack of measles, and

pseudo-membranous pharyngitis, having a great tendency to involve the larynx, is a complication which will always demand our best attention.

Likewise the pharyngeal catarrh may extend to the nose, eyes and middle ear, producing complications in these parts that will be a source of great discomfort to the patient and much annoyance to the attending physician. Catarrh of the gastro-intestinal tract is in some epidemics very pronounced. Diarrhoea, even of a dysenteric type, is a very troublesome symptom and sometimes difficult to combat.

It is claimed that measles renders the tissues very susceptible to tubercular bacilli and it is further claimed that tuberculosis affecting the lungs, glands and joints is the most serious sequel of measles.

Chronic conjunctivitis is a frequent sequel, but not so frequently as in past years, due, no doubt, to our greater intelligence in the care of the eyes during the attack.

The diagnosis of measles should not be very difficult since there are only two very similar diseases—scarlet fever and rubella or German measles. Scarlet fever is more sudden in its onset, the fever is higher, and there is no pre-eruptive remission; the sore throat is more marked, the rash bright red, and there is a uniform erythema contrasting with the blotchy exanthem of measles. Koplik's sign, consisting of bright red spots having pale bluish center, appearing on the inside of the cheeks 24 or 48 hours before the appearance of any skin eruption, is a valuable diagnostic sign of measles. I have observed the spots a great many times and believe that they can be found in a great majority of cases.

German measles presents similar symptoms to measles, and is to be distinguished mainly by the mildness of the attack. The rash, which is usually more rose-red in color, appears within the first two days. The cervical glands and post-auricular glands swell promptly in rubella.

The prognosis of uncomplicated measles is favorable. The complication and sequelae add gravity to the disease, making the prognosis less favorable as the complications are more or less severe.

When a household becomes infected with measles the first thing to do is to isolate the patient. The room in which he is placed

should be one capable of being well ventilated, and of such size and makeup as to make it possible to locate the patient in bed out of the influence of all drafts of air. This matter of ventilation is often a stumbling block, and we will frequently visit rooms where measles patients are confined in which the air is so impure from lack of ventilation, and so cheerless from lack of proper light as to make one shudder to enter. No room is suitable for living purposes either for well or sick people which is not supplied with an abundance of good fresh air and plenty of light. Let in the air and light, but protect your patient from both with suitable screens.

The patient recovering from measles should be kept in bed until the catarrhal symptoms are well under control. This period varies from a very few days to 10 or 12 days.

If the ocular symptoms are very distressing, the eyes should be protected from very bright light, not by refusing the light entrance into the room, but by placing some obstruction between the bed and the source of light, and in extreme cases by the use of dark glasses. The use of weak boric acid solution or distilled extract of witch hazel is very soothing and generally all that is needed.

Since the catarrhal discharges are found to contain the contagion, and the discharges from the mouth are well charged with the pneumococcus, it is good treatment to cleanse the nose and mouth frequently with some weak antiseptic solution.

The skin should be bathed daily, not with the idea of reducing the temperature, because that is unnecessary, but to keep the functions of the skin active. If great cutaneous itching is present, rubbing with olive oil or 1-500 solution acid carbolic will usually relieve.

The diet should be light and nourishing, milk furnishing all the requirements.

The remedies required are usually very few in number. Aconite it no doubt the best remedy for the initiatory stage. Bryonia has seemed to be very valuable to mature the case and cause the appearance of the eruption, and often helps the cough. Pulsatilla is very valuable for the catarrhal symptoms, when mild and little fever is present. For violent acrid discharges from eyes and nose euphrasia is a grand remedy. Kali. bich. may be required if the character of

the exudate, time of aggravation, etc., indicate it. When the cough is dry and hoarse and ringing drosera will often relieve. For the bronchial affections tartar emetic, iodide and arsenite of antimony and many other remedies may be needed. Indeed, since the remedy required is selected, not for the disease, but for the symptoms present, it is difficult to tell what remedies might not be indicated.

We homœopaths need not write long dissertations on this subject, for if we know our materia medica, and have the happy faculty of comprehending the symptoms presented by our patients, we should have little difficulty in selecting the proper remedy for any case at any time.

I have purposely omitted many interesting points relating to measles, but hope the discussion will bring them all out in full, particularly the great contagiousness of measles and need of quarantine of the families affected.

REPORT OF THE SECTION OF MATERIA MEDICA AND PROVINGS.

The Action of Some Remedies on Mucous Membranes—Introductory, by T. H. Carmichael, M. D.

Pulsatilla; Its Action on Mucous Membranes, by Eva N. Blake, M. D.

Kali Bichromicum; Its Action on Mucous Membranes, by A. P. Bowie, M. D.

Sepia; Its Action on Mucous Membranes, By Edward Cranch, M. D.

Natrum Muriaticum; Its Action on Mucous Membranes, by M. M. Fleagle, M. D.

Hydrastis; Its Action on Mucous Membranes, by I. B. Gilbert, M. D.

Arsenic; Its Action on Mucous Membranes, by O. S. Haines, M. D.

Calcerea Carbonica; Its Action on Mucous Membranes, by Edward Cranch, M. D.

The Mercurius Mucous Membranes and Comparisons, by William A. Seibert, M. D.

THE ACTION OF SOME REMEDIES ON MUCOUS MEMBRANES—INTRODUCTORY.

T. H. CARMICHAEL, M. D., CHAIRMAN.

This paper contains simply some remarks of an elementary character and is designed to form a connective link between the papers that follow. All of the materia medica papers to be read at this session are upon mucous membranes. It is hoped that this innovation will be profitable, as it makes every paper a part of the whole study and gives a connected value to the report of the section. Each paper may be regarded as the comparison study of every other paper presented and it is through a study of comparisons that precision may be attained in the use of the homœopathic materia medica.

The mucous membranes were selected because of their importance as the seat of the commonest diseases that we are called upon to treat.

As they line the points of entrance and exit of the body, they are easily subject to inflammation from various kinds of irritants —to hemorrhage, atrophy and hypertrophy. They are also affected in tuberculosis, syphilis, lupus and leprosy, and may be the seat of new growths such as mucous polypi, adenoma and carcinoma.

A mucous membrane is defined as one composed of epithelium upon a basement membrane with a sub-cutaneous tissue lining those canals and cavities of the body which communicate with the external air.

As these membranes are continuous with the skin, they resemble it in structure. The epithelium of the membrane is finer and varies with the function of the organ which it lines and under the basement membrane is found the fibrous tissue which is looser than in the skin. Blood-vessels and lymphatics abound extending from the sub-mucous connective tisue up to the epithelial layer. In addition nerves and mucous glands and processes known as villi and papillae (which latter are analogous to skin papillae all occur in the sub-mucous layer.

The epithelium allows the free passage of liquids not only between its cells but also through its substance. These liquids may come from without or may be excreted from the blood-vessels. In addition to this excretory liquid there is the secretion known as mucus produced in some of the epithelial cells and also in the mucous glands which occur in the sub-mucosa.

These fluids form a protective layer against injurious agents. When, therefore, they are sufficient to resist noxious influences the membrane preserves its normal functional activity.

Normal mucus has germicidal power. This has been shown by the killing of streptococci by vaginal mucus within twenty-four hours after their introduction into the vagina.

At certain times the mucous membrane of the stomach, intestines and of the uterus undergo a normal hyperaemia.

Pathological hyperaemia results from paralysis of the vaso-constrictor or stimulation of the vaso-dilator nerves. In either

case the membrane is reddened and shows distended vessels and its secretion is increased.

Our provings are rich in similar hyperaemic conditions of the membrane which when properly used afford the most scientific method of treating such diseased states. The extent of the homœopathic materia medica in this direction meets every ordinary want and it is only a careless prescriber who would leave it to use other methods.

Of course our prescription is not to be made upon the condition of the mucous membrane alone any more than it would be for the name of the disease (and even the old school is rapidly forsaking the time-honored custom of treating diseases).

The condition of the mucous membrane is only one symptom of the patient and while it may be the most prominent objective symptom, it is necessary for the best success that we forget the pathology alone, as some one has said, and prescribe for the patient as a whole.

By prescribing in this way the careful homœopathist is frequently able to jugulate or abort diseased conditions before they have advanced beyond their initial stage of entrance into the body through the mucous membranes and he should not be diffident in claiming this action for his remedies. It is by no means uncommon for the syndrome which gave every indication of proving to be a severe case of typhoid fever to run its course and be followed by convalescence within ten or twelve days under baptisia, bryonia, gelsemium, rhus or other indicated remedy.

If we may include the mucous glands in the consideration of our subject, then we would incidentally call attention to their functions—not only the formation of mucus but also to the part which they probably perform in arresting pathogenic agents from further invasion of the organism and to suggest that the proper treatment of diseased conditions of these glands is by homœopathic medication and that surgical treatment by excision should be reserved for cases seen in advanced stages of structural change.

To return to our subject proper, it would be impossible to attempt an enumeration of the remedies whose pathogenesy in-

cludes special action upon mucous membranes without making these remarks a repertory, which is not their purpose.

In closing, however, it may be of interest to mention one or two remedies in whose pathogenesy may be found similar pathological states to some of those that we notice in these membranes.

A perfect similarity exists in the provings of aconite and belladonna with the most marked hyperaemia in mucous membranes. The inflammation is apt to be intense and the membrane hot, red and showing its distended blood-vessels.

Where the inflammation has extended into the sub-mucous layer producing oedema, apis mel. will show the same condition.

Pulsatilla is typical of remedies applicable to the full catarrhal process where there is great increase in the secretion of mucus but where the inflammation rarely goes on to suppuration.

If ulceration has taken place, there are a variety of remedies for selection according to the seat of the ulcer and the changes resulting in the membrane. Pustular ulceration is represented by antimonium tart and hepar.

Kali bichromicum stands for remedies causing ulceration in parts where columnar epithelium is found—especially in the upper half of the body. In the intestines, ulceration, beginning in the same kind of epithelium and dipping into the solitary glands and those of Peyer, finds similar drug diseases in baptisia, bryonia and other remedies.

Mercury and its salts have produced false membranes and therefore are similar to the croupous inflammation which occurs from destruction of the epithelium and coagulation of the exudate from the damaged blood-vessels.

Hemorrhages from mucous membranes are met by hemorrhages produced by hamamelis, hydrastis and other remedies.

Atrophic conditions are also found in aurum, elaps, theridion and other remedies.

Hypertrophic conditions occur in baryta carb. merc. sol. and other remedies.

It is, therefore, evident from this brief enumeration that we have a pathological basis for the selection of the simlar remedy for nearly all affections of mucous membranes.

Where the homœopathic remedy in a suitable preparation can be applied locally to the membrane, its use in this manner may be added to the action of the same remedy given internally.

We would, however, condemn the indiscriminate use of the various mixtures so frequently employed for producing local effects on these membranes. In many instances the immediate benefit said to be experienced from their use is purely psychological and in other cases improvement is postponed until nature has thrown off the effects of their irritation. In most cases careful study of the patient and the use of the properly selected remedy is the quickest and surest way in which to bring about the desired results.

PULSATILLA: ITS ACTION ON MUCOUS MEMBRANES.

EVA N. BLAKE, M. D., PHILADELPHIA.

Pulsatilla, anemone, wind flower. Tradition says that the anemone sprang from the tears of the goddess Venus. At any rate, the word anemone comes from anemos, wind. This tradition and one fact give us two important characteristics of the drug, *i. e.*, increased secretion (tears) and delicacy of the structure with changeableness.

Pulsatilla acts upon the vascular system, especially on the right heart, and on the veins and capillaries. Thus we find that whatever retards the return of blood to the heart must, of course, provoke just the train of symptoms in which Pulsatilla may be indicated. We know that a warm, close room will produce these symptoms. If you should sit in a close room or one whose temperature is too high, the veins would become tortuous and there would be oppression about the chest and retardation of heart's action. This is a picture of Pulsatilla. It acts on the right heart, more than on the left, consequently, despite chilliness, which arises from anaemia, the open air acts as a stimulus to the venous circulation. This improves the symptoms depending on the sluggish flow of blood. Therefore, we shall expect the vaso-motor system to be generally affected, and consequently increased secretions on mucous surfaces.

Eye—Pulsatilla produces tearfulness and tears. There is a

strong tendency to weep at trifles or nothings. It is said that the blossom of the anemone opens only to the wind. Just so the pulsatilla patient is happy only when he has plenty of company and sympathizers. But sympathy or an attempt on the part of the patient to rehearse his condition causes increased secretion of tears. If this continues for some time, lids become red and swollen. There is itching and smarting. Ordinarily the local picture is one of Aconite or Belladonna, but history of tears completes the picture of Pulsatilla. In chronic conjuctivites the Pulsatilla secretion is thick, greenish yellow, bland, variable, increased one day and almost disappearing the next. Lids may be agglutinated. Eyes "watering" when in a light wind, with itching and smarting of lids—an excellent remedy for autoists.

Nasal mucous membrane. Pulsatilla here affects the very early symptoms of merely increased secretion, accompanied by venous retardation. And Pulsatilla will be indicated in just such so-called "colds in the head," which develop after being in a warm, close room. And this is probably a more frequent cause of nasal congestion and coryza than actual draughts of fresh air. Pulsatilla has the reputation of curing only the later stages of coryza, secretions having the characteristic thick consistency, yellow or green, non-irritating. Among children I have found the condition prevalent and readily yielding to any potency of Pulsatilla from 30x to 45m. One patient, a girl of 13 years, came to the dispensary, complaining of frequent "spitting." On careful questioning, the following symptoms were elicited: pain in frontal sinuses at any time, lasting a variable length of time; dropping from posterior nares of thick, bland, tenacious yellow chunks of mucus. Child not yet matured but developing rapidly. After Pulsatilla 45m, discharge became less and headaches less frequent.

Throat—Pulsatilla has marked action here, particularly when accompanied by gastric disturbance. Sensations of rawness and soreness, of swelling and fullness prevail. Pharynx has venous congestion, showing distended blood vessels on surface. There is a sensation of dryness, usually without thirst.

Chest—If the trouble extend from throat to bronchi, we expect to find the expectoration having the same characteristics as the nasal discharge. It is white, green, tenacious, or thick yellowish

matter of a bitter, greasy, salty or putrid taste, always markedly variable.

Stomach—Here we find increased secretion. There is rising into the throat of thick mucus, waterbrash; sensation of scraping and burning with nausea and vomiting of food or bitter acid mucus. Thirst may accompany. Symptoms of anxiety, worry, fretfulness with tears are present when Pulsatilla is the remedy and during pregnancy this condition is present frequently.

Intestines—Increased secretions still. Distention of abdomen with sensitiveness to touch. There is much venous stasis due to mental preoccupation. Colic symptoms supervene for a time, followed by diarrhoea. Stools may be thin and watery, bland, yellow, sometimes bloody. No two stools are alike. They may be green, watery, acid, bloody yellow, white, etc. Venous congestion leads to hemorrhoid, which we find, blind or bleeding. Smarting, itching and some pain accompany, with spasmodic bleeding.

Bladder—Cystitis is present, characterized by scantiness of urine, or increased urination with mental excitement. Enuresis occurs in mild individuals and children. Urine is sometimes profuse, watery, sometimes scant and red or brown, with micturition is burning at urethra.

Genital organs, male—The discharge here of Pulsatilla is very like that of gonococcus infection. There is little or no excoriation of parts, but secretion is thick yellow or green and intermittent.

Genital organs, female—Menstrual discharge is delayed or intermittent. Normal secretion is increased to a leucorrhoea, uterine or vaginal. Leucorrhoea may be thin and watery with sticking pains and itching, or thick yellow and bland. It "comes in fits and starts," as does also the menstrual flow. Lochia, too, stops for a few days or hours and then starts with a rush. Lochia may be white in color, of a milky consistency, (Clark.) Varicosities due to sluggish venous circulation are marked throughout genital disturbances.

In summing up the general action of the anemone on mucous membranes, we have two chief manifestations as a result of its action on the vaso-motor system—

1. Venous stasis.
2. Increased secretion.

DISCUSSION

DR. W. G. DIETZ: The paper by Dr. Blake is a very interesting one. It gives you the picture of an old remedy. The great trouble with these old remedies is that we are so well acquainted with them that we forget the symptoms; and so with pulsatilla. You can not speak merely of the symptoms that the remedy produces on the mucous membranes without touching in some way on the general constitutional effects of the same. You can not prescribe for the mucous membrane without taking the condition of the patient as a whole into consideration.

Is it the secretions which indicate the use of Pulsatilla? I say no. It is the infallibility of the constant change in the symptoms, it is immaterial what the nature of the symptoms are. You can not account for these changes in the patients. It is the constant change in the attitude, in the constitutional symptoms, in the mental and in the physical when Pulsatilla is the remedy.

The Doctor speaks of the heart—the heart is not primarily seriously affected by Pulsatilla. The heart simply suffers secondarily through the sluggishness of the venous and capillary circulation. The mental symptoms have nothing to do with the mucous membrane at all, but they are simply the expression of the mental condition produced by the remedy. They have nothing to do with the increased secretion.

The Doctor speaks repeatedly of the mucous secretion being tenacious. The Doctor may be right and I wrong; but I think tenaciousness does not belong to Pulsatilla; it does belong to kali bichromicum and hydrastis. Those two remedies have a tenacious secretion and yellow mucus, which might be confounded for Pulsatilla symptoms.

The kali-bichromicum has naturally a more penetrative action on the whole system; but irrespective of that, the more tenacious your secretion, the more yellow, the longer it lasts, the more kali-bichromicum is indicated. Where it is in a less marked degree hydrastis is indicated.

When the causes of gastric disturbances are chilling substances, eating ice cream and taking ice water in an overheated condition, it comes in here in comparison with other remedies. If the condi-

tion is due to chilling, whatever the cause—ice water or what not—Pulsatilla, arsenic and bryonia are the three remedies that come into consideration. Under arsenic, thirst is more apt to be marked; although we have a thirstiness in bryonia just as we have thirstiness in Pulsatilla; and in arsenic you have a condition which at once impressed you with its seriousness—the great depression of the system, with that violent, excruciating, burning pain in the stomach, often without having a moment of rest; that is a condition that calls out arsenic. As Dr. Carmichael very well expressed in his introductory paper, nowadays the comparison of remedies is becoming less and less marked, and less and less considered in our homœopathic prescribing. Shotgun practice too, not with one remedy. Years ago comparison was one of the principal teachings; and let me tell you it is one of the most important ones. Nearly all such drugs having a similar effect, except a certain return of symptoms at a certain time and under certain conditions, need to be carefully compared in order that the proper one is selected. There are a lot of wiseacres in our profession who stand up and make long faces when any one speaks of high potencies; but when they, too, learn the conditions in which to give them, we need not fear comparison with old school physicians.

DR. T. H. CARMICHAEL: In old school works which spoke of Pulsatilla, up to the past two or three years it was usually dismissed with the statement that "Pulsatilla is a remedy that acts like aconite." There is just one little use that I make of Pulsatilla that corresponds to that prescription, and that is: in cases that frequently come to us of where there is an inflammation of the conjunctiva from foreign objects, either where the foreign object has been removed before the patient came, or where we have to remove it, I invariably prefer Pulsatilla instead of aconite or belladonna for that conjunctival inflammation. It has become a routine remedy with me in such cases.

DR. EVA N. BLAKE: I want to explain my meaning of the word tenacious. Perhaps this is unnecessary; but I took the word from one of our first rate authors on materia medica. I mean by tenaciousness something that sticks; and I think that a good many of the authors on materia medica give the idea that the mucus

secretion which calls for Pulsatilla, sticks. This patient that I mention has this very characteristic: he says, "It takes a long time to get up what I have as it is so sticky."

KALI. BICHROMICUM—ITS ACTION ON THE MUCOUS MEMBRANE.

A. P. BOWIE, M. D., UNIONTOWN.

In writing upon this remedy, no original matter is attempted, as I consider the verification of symptoms of provings of more importance than new provings, for in this way and in this way only will we perfect our Materia Medica.

Kent, in his Materia Medica, says: The principal use of Kali. Bichromicum is in diseases of the mucous membrane. It has been able to bring out in its provings symptoms of all the mucous membranes of the body.

Hughes writes thus in his Pharmacodynamics: The action of Kali. Bichromicum on the mucous membrane is as marked as Arsenic and Tartar Emetic.

It causes a morbid increase in the quantity of mucus formed, which mucus is sometimes tough and stringy and sometimes degenerates into pus. Higher grades of the inflammatory process are seen in the respiratory mucous membrane, and (when the poison has been swallowed along the alimentary tract,) in the former region false membranes have been formed—in the latter the tendency is to ulceration.

The portion of the mucous membrane chiefly affected are the mouth, throat and cardiac portion of the stomach. Duodeum and jejunum and rectum and the whole respiratory membrane, including conjunctivae.

In Dr. Allen's Hand Book, in giving the general action of this drug, he says "A tissue drug affecting the skin and producing general catarrh of mucous membranes and frequently erosions or ulcerations." Why he should place its action on the skin first is more than I can understand, for the skin symptoms are mostly developed from its local action in workmen who handle this drug—

whereas its internal use as noted by Hughes, gives us the catarrhal symptoms so valuable for use in prescribing.

The study of a single drug as developed in our provings, shows the utter futility of mixing remedies or even their alternation. Until we have drugs proved in alternation or combination, we have no knowledge of their action in that way and Hahnemann distinctly lays down the law regarding this matter.

If we take the drug, we are now considering and note its general action and then its specific action, we find no drug can take its place or supplement its use. It is only the general action of the remedy and a few of its symptoms can be considered in this paper.

Its whole action must be studied from the most excellent provings we have.

In the volume entitled, Materia Medica Physiological and Applied, published in England, the action of this drug is given in extenso and a model for all provings.

It is not simply in catarrhal, but even in a deep seated cachexia or miasm, it is useful. No remedy excels it as is indicated more frequently in syphilitic sore throat, and ulcerous conditions heal under its influence.

The eyes, ears, nose and throat all are acted upon by the drug and in croup in my experience no remedy excells it.

If there is such a thing as a specific in all Materia Medica, Kali. Bichromicum is such in regard to action in the mucous membranes.

In regard to the potency to be used except in diphtheria and croup—the higher potencies act best. It is very easy to cause aggravations when the drug is strictly indicated—then the remedy must be discontinued and a placebo given.

In giving the clinical verifications I confine myself to the symptoms of the eyes, nose and throat, larynx and bronchi.

SYMPTOMS OF THE EYES.

Burning of the lids. Increasing in intensity.

Redness and swelling of lids, with discharge of watery mucus or stringy and yellow discharge.

Agglutination of the lids with redness of conjunctive and followed by ulceration.

Eruptions around the inflamed eyelids.

Feels like sand in the eyes.
Desire to rub the eyes.
White granular elevations in left eye.
Scrofolous Opthalmia.
Catarrhal Conjunctivitis.

SYMPTOMS OF THE NOSE.

Catarrhal affections, from a simple cold to ulcerated conditions. Ozena. Scabs and tough clinkers form in the nose—bleeding when removed.
Obstructions of the nostrils.
Burning sensation in the Schneiderian membrane.
Polypi.
Dryness in nose.
Itching.
Purulent inflammation of mucous membrane with external swelling.
Ulceration of Septum.
Sore feeling in the Nose.
Pain extended to ear and frontal sinuses.
Chronic Nasal Catarrh.

THROAT.

Burning in Pharynx.
Scraping and hawking of tough mucus.
Choking with expectoration of stringy mucus.
Sensation of hair in the throat.
Raw feeling.
Sensation of a plug, with redness and elongation of uvula.
Ulcers in tonsils and throat covered with an ashy slough.
Syphilitic sore throat.

LARYNX AND BRONCHI.

Laryngitis—Catarrhal.
Membranous and Diphtheritic.
Tenacious—Stringy expectoration.
Aphonia.
Painful to cough.

Pain as if ulcerated.
Acts best when there is an absence of fever.
Purulent expectoration.
Dryness and burning in larynx.
Bluish white expectoration.
Black expectoration, useful for a coal miner's cough.

SEPIA; ITS ACTION ON MUCOUS MEMBRANES.

EDWARD CRANCH, M. D., ERIE.

The action of this drug, Sepia, upon the mucous membranes, is of marked and easily verified value, well repaying careful study in this field, in the areas, according to usefulness, first of the bladder and genitalia of both sexes, second, in the bronchial tract, third, in the alimentary canal, fourth, in the conjunctivae and nasal linings. Of course, no successful prescription can be assuredly made on the symptoms of these regions alone, as the peculiar nervous, mental, muscular and secretory phenomena, together with the sense of temperature, and the appearance of the skin, must be considered before a decision is arrived at in any individual case.

To follow the order just suggested, the first involvement in most provings is in the urinary secretions, affecting the mucous membrane of the uropoietic organs by its passage over them, causing inflammation of the mouth of the urethra, with shooting pains and soreness extending upwards. (The pains of Ignatia shoot upwards, but there is no marked soreness.) Afterward there is cystitis, of an agravated, chronic type, with yellowish green muco-purulent discharge, this color and character being frequent in all the mucous discharges of Sepia. Its presence lends a peculiarly fetid, highly offensive odor to the urine, resembling that of Calcarea, but not so rankly urinous as that of Nitric and Benzoic acids. The odor suggests the presence of residual urine, which indeed is often found in cases needing Sepia, as in prostaic enlargement, and in gravel.

Its use in gonorrhea and gleet is based upon these findings, and it is many times exceedingly useful, and is always to be thought of in connection with Cannabis, Hydrastis, Hepar, Pulsatilla and other like muco-purulent remedies.

In the female, leucorrhea is very often benefitted, especially in those past middle life, who must often lie down, and who are squeamish and fickle in their appetite, and very chilly.

Prolapsus is common, too, both as cause and consequence of the vaginal discharge. The latter is sometimes checked, resulting in a sort of dry catarrh of the vagina, rendering it repugnant to contact, which is disagreeable and painful. The main rivals of Sepia in female complains are Hydrastis, Pulsatilla, Kreosote and Calcarea. All of these may help to restore arrested menses, and should be used with caution in suspected pregnancy.

The action of Sepia on the bronchial mucous membrane is to produce a continuous dry, or "useless" cough, day and night, and worse in the cold. Later, there is a heavy yellowish-green sputum, as in later stages of consumption, where it is often palliative & more so than the dangerous opiates of many names, which relieve only by locking up secretion, and so often precipitate a fatal termination of the case. In prolonged whooping cough with abundant mucus, it is of great value, vying with Corallium rubrum, and Kali. Sulfuricum.

In the alimentary canal there are present, in Sepia cases, the same sort of mucous secretions already described.

The lips and gums are sore and swollen, the tongue sore at tip, and often coated heavily white, as in Antimonium crudum.

The breath is fetid, there is often a clammy mucus in the throat, and putrid risings from the stomach. The patient gags and vomits easily, as on brushing the teeth, on the smell of food, even on disturbing or unpleasant news, or disagreeable domestic happenings.

There is hawking, with perhaps bloody mucus, and a sensation of a plug in the throat. Many conditions suggest a comparison with Ignatia, but the abundant secretion which is present or trying to come on in Sepia cases, serves to distinguish satisfactorily.

The taste of food is too salt, contrasting with Pulsatilla, where the taste is too fresh, and more salt is craved.

The stools, generally slow and scanty, are often diarrhoeic; frequent, but not copious, and worse after boiled or sterilized milk, as in bottle-fed children, suggesting the preferable use of raw milk heated only to blood temperature, as better than milk that is pasteurized or sterilized. In fact, the value of the "Pasteurized" milk

of cities where funds are subscribed for its distribution among the poor, lies not in the heating, but in the selection and cleanliness of the milk and its careful handling. Heating, or even prolonged boiling, will not kill the really dangerous germs of bad milk, but most of them are readily excluded by care in the choice of cows and in their proper cleanliness, and that of their attendants with the dishes and other receptacles of the milk.

And the knowledge of the curative sphere of Sepia helps us to this conclusion, by curing diarrhoea caused by poor milk, the germs being antagonized by anti-bodies whose formation is stimulated by the exhibition of the Sepia.

Sepia may be thought of, (with the caution suggested above) in the constipation of pregnancy. Always there is the sense of a lump, described as an apple or a ball or a plug, felt in the rectum or stomach, or other part affected with the Sepia symptoms.

There are hemorrhoids, with the sensation of a ball, with pains and soreness darting upward, perhaps with bleeding, and often with involvement of the bladder, as in Aluminum.

Itching eruptions, also sycotic warts, or condylomata, are common, suggesting venereal origin of the symptoms.

Many eye symptoms are met with, chiefly of the lids, like styes, itching, incrustation, etc.

Nasal catarrhs are torpid, chronic, profuse, green and yellow, as in Pulsatilla. In Sepia the action is more deeply seated, and even the bones may be involved, as in ozoena.

Here Hecla lava, Slag, and Silicia are to be compared.

There is no acridity to the discharges, however, as is common in the mercurial and iodide catarrhs, in many cases.

Laundry workers are good Sepia subjects, but they also suggest very strongly Bryonia and Calcarea.

The Sepia subject is nearly always tired, or as Mark Twain would say, "saturated with rest."

There is slow reaction, and recoveries are not always speedy, but when the type is clearly seen, Sepia may be most confidently given.

DISCUSSION.

DR. W. G. DIETZ: Sepia is a remedy which is little heard about

nowadays among homœopathic physicians. It requires considerable study to understand it and get good from it. It must be carefully differentiated from other homœopathic remedies that closely resemble it in symptoatology. In its action on the mucous membrane it produces discharges, as the Doctor said, which are generally thick and green—more green and yellow than in Pulsatilla; and the process is more active then with Pulsatilla. In the nose it must be compared with kali. bichromicum. When hard lumps are blown from the nose, or hard, dry scabs come from the posterior nares, sometimes at periods of from six to seven or eight days. The more they are of that character the more the condition is capable of being reduced by kali. bich.; but if they are merely due to obstruction of secretions for a long time, sepia may help. In aurum, it is due to a specific cause, and generally coincident with a diseased condition of the bone of the nose—the vomer—but in cases where aurum is indicated, you can always look for the extreme melancholy, the tendency to suicide and the thick fetid discharge from the anterior nares.

The Doctor speaks of sepia in whooping cough. It may be that it is useful there, but there is a cough, especially in young women, that simulates whooping cough; which generally comes in the morning and is often thought to be whooping cough, though it is not, which Sepia will cure.

In the young and younger women, Sepia has its supreme sphere. There will be a discharge of a thin leucorrhea which is accompanied by a predominance of symptoms of bearing down accompanied with laxity of the pelvic organs; but we must not lose sight of the mental symptoms of Sepia; the great depression which this remedy has, and a great tendency to forget events of recent date and remember things that have passed long ago. And another thing, a very disturbing element in the family, is that a good wife loses her affection for the husband; she stays away now and lets him alone. That is a very important symptom for Sepia.

The great indication for Sepia in cystic conditions is practically a keynote and a universal symptom. Wherever you find this symptom you find all other symptoms will fall into line; and that is an exceedingly offensive odor of the urine with a sediment that is hard to remove and sticks to the chamber.

DR. H. M. BUNTING: What about the color of that sediment?

DR. DIETZ: It is of two kinds. It is very often like brickdust; but it is also a sediment of the phosphates, which is a dirty grayish white sediment.

DR. H. S. WEAVER: I have never used Sepia very much or at least I had not used it very much until a few years ago. In looking up cases, I find it is rather useful in nose and throat work, as well as in gynaecological work. My chief indication for prescribing Sepia is the little drop of mucus that hangs onto the tip of the nose. You will find patients coming into your office without any other symptom, only they complain they cannot get rid of that drop of mucus that will come down and lodge on the tip of the nose; and I have found Sepia a very valuable remedy in that condition. I have used a great deal in recent years.

DR. T. H. CARMICHAEL: More in elderly patients, Doctor?

DR. H. S. WEAVER: People past middle life. You more usually find that drop in elderly patients; but I have seen that in quite young patients. I have seen one minister who was absolutely suffering from it, because, in looking down at his notes in preaching, he would see the drop of mucus on the end of his nose; and a little Sepia cured him. I use the sixth decimal.

DR. H. M. BUNTING: In speaking of the drop of mucus on the nose, I think if Dr. Weaver had inquired closely into the mental symptoms, into the general makeup of the patient, he would have found that Sepia nearly—very nearly covered the mental and physical conditions of the case, as well as the nasal drop. It has done it in several cases for me.

DR. EDWARD CRANCH: I am obliged to the gentlemen who have spoken on the subject, illuminating the case of Sepia to quite an extent. Dr. Clark says he has been using a fresh preparation from the cuttle-fish and claims it is better than ordinarily supplied; but I think that that which I have found, which is brown in color, is as fresh as need be. The brown colored Sepia in the trituration is apt to be better than that which has become old and vesicated and black. You will have to be careful what preparations you use. As far as potency goes, I use it all the way from the third to the two hundredth and the thousandth, and with good results all along the line. In the case of chronic catarrh, where the

thick secretion comes from the back of the nostrils, I have found it very useful. The chronic cough, constant cough, is one that I have used it for many times; they cough all the time, day and night, a regular battery of coughs; and in that condition Sepia helps; but the keynote of Sepia, to my mind is so-called lassitude, and desire to lie down during the day, and sensitiveness to being disturbed—they want rest; and all you can do with them is to let them rest. Their forgetfulness of recent events is part of that general lassitude.

NATRUM MURIATICUM; ITS ACTION ON MUCOUS MEMBRANES.

M. M. FLEAGLE, M. D., HANOVER.

Natrum Muriaticum—Sodium chloride, or "common salt," is more widely distributed in nature, and enters into more combinations—chemical or physical, than any other substances excepting water (H_2O.)

Whether we speak of the most sublime thing in nature—the mighty ocean, or the highest and most wonderful of all God's creation, as exemplified by man, sodium chloride seems to be a necessary and material constituent. It is present in all the tissues and fluids of the human body—the total amount, in an adult, being about one-fourth of a pound. It is undoubtedly one of the most important of the mineral constituents of the human body, not only on account of its distribution, but on account of the important part it plays in nutrition—being second only to the *lime salt* (calcium phosphate.)

What wonder then, if sodium chloride (natr. mur.) plays such an important part in the vital activities during health, that it should also have a useful sphere in disease, and so we homœopaths (thanks to Hahnemann) find it to be. Whatever physical, chemical or physiological properties natrum muriaticum may possess, they are far surpassed by the dynamic, curative effects of the drug, when administered according to the "Law of Similia." Natrum muriaticum is the waterloo of the medical skeptic. Allopaths ridicule it; "scientific" homœopaths ignore it; and alas! too many of

us deny it that fair trial which it deserves, and which is so necessary for a correct understanding of its virtues. There are several reasons for this: In the first place, it is difficult for some of us (especially for those who have not tried it) to see how it is possible for an attenuated dose of natr. mur. to produce curative effects, when we are daily taking into our bodies great quantities (comparatively speaking) of the drug in its crude form, and yet without *curative* effect. As a matter of fact it is possible to take great quantities of "salt" into the system, and yet the *economy* be actually *starving for salt*, because it cannot assimilate it. To those of us, therefore, who can only see "common salt" in natr. mur., it is prima facie evidence that we are "on the wrong track," and the "truth (of homœopathy) is not in us."

In the second place this is a "strenuous" age. People who have been sick for years want to be, and expect to be, cured in a few weeks or months, and are impatient if they do not see "some improvement "in a day or two after taking the remedy. Now, natr. mur. is a long-acting and a deep-acting remedy, but rather "slow" in producing its effects, that is, the patient thinks so, hence we are apt to cast it aside as inert or useless, when a continual trial of the properly attenuated drug would give us wonderful and even brilliant results.

Natrum Muriaticum is one of the deepest-acting anti-psoric remedies in our whole Materia Medica. It corresponds to those slow, insidious diseases which are a long time in developing, but once developed, are of prolonged and uncertain duration, because, as a rule, they are *vital* (chronic.)

Diseases of mucous membranes belong to this class, and since most of these are catarrhal at some stage of their existence, we can see how natrum muriaticum, in its very nature, corresponds to the varied manifestations of that hydra-headed monster—catarrh.

In natr. mur. the characteristic discharge from mucous membranes is watery, or like the white of an egg—raw or cooked—and is usually acrid and excoriating.

Natrum mur. has a decided action on the eyes. It cures blepharitis when the eyelids are thickened, reddened and disgusting in appearance—looking like raw beef, with an acrid, watery discharge, excoriating the sickly, yellow, greasy-looking face over which it

flows. With these objective conditions we find a "sensation as if the eyes were full of sand." We also find one of the grand characteristics which runs through the whole remedy, namely, "a sensation of *dryness* in the mucous membranes".

Natrum mur. will be found especially serviceable in cases of eye trouble, which have been treated with nitrate of silver, used as a caustic.

On the nose and throat natrum mur. has a very satisfactory action. Here also we find soreness, with a sensation of *great dryness,* as if the mucous membranes would crack. There is loss of the sense of smell and taste (puls.) and the discharge, if any, is clear mucus, which is transparent like the white of an egg, but sometimes yellowish-white in appearance. With natrum mur. I have *cured* some persons, and relieved others, of a condition in which there were violent paroxysms of sneezing, occurring in the early morning, as soon as the patient attempts to rise. The mere changing of the upper or lower limbs to a cooler place in the bed, or the change of temperature incidental to uncovering the body, are all sufficient to bring on these violent attacks of sneezing (compare also sabadilla, wyethia, and rumex crisp.)

These cases to me indicate a chronic catarrhal state, of long standing, and are very difficult to cure, but I believe the action of the higher potencies of natrum mur. to be capable of eradicating even such a deep-seated miasm as *hay fever*—not its *acute* manifestation, remember, but the underlying psoric cause.

The throat comes in for its share of trouble. In cases of chronic catarrh of the throat, you may nearly always elicit a history of its having been "burnt out," probably with lunar caustic, and an examination will show a glazed appearance, with sensation of great dyrness as if the mucous membrane would crack, and the patient declares there is a splinter or a fish bone in his throat, and insists that you look for it carefully. Now, hepar, nitric acid, argent. nitr. and alumina have this symptom as well as natrum mur and ought to be compared. This catarrhal condition may extend to the ears, causing a dry catarrh of the middle ear with a sensation of "cracking in the ear when masticating." The lips and corners of the mouth are dry and cracked.

The tongue may be dry and glazed, or shining, but probably more

interesting is the *mapped tongue*. It seems as if there were ringworms all over the tongue (ars., lach., mer., nitr. ac., kali. bich., and taraxacum, but I have also removed them with ant. crud.) To those of us who have seen well developed cases of scorbutus, the sensitive, spongy, bleeding gums—pouching down over the teeth, and the putrid odor from the mouth, forms a striking picture of what natrum mur. can cause and cure, for this group of symptoms is very apt to arise in persons who live for too long a time on salt meats and canned foods without sufficient variety of fresh fruits and vegetables.

Natrum muriaticum affects the whole alimentary tract—from mouth to anus. Some of its symptoms are very striking and characteristic. The natrum mur. patient has *intense thirst* for *large quantities* of *cold* water—drinks *much* and *often*, and water *agrees*. This is in rather striking contrast to the ars. patient, who drinks *small* quantities of water, *often*, and water *disagrees*. The eupatorium patient drinks large quantities of water, often, but it causes vomiting.

The natrum mur. patient also has a *ravenous hunger;* no patient is more hungry, yet he loses flesh, even while eating well. (Abrotanum, baryta carb., iodine.) This emaciation is principally around the neck, however, like calc.-phos. The natrum mur. patient feels *better* on an *empty* stomach, which symptom is directly opposite to such remedies as anacardium orientale, iodine, chelidonium, and petroleum which are *relieved* by *eating*. One of the most prominent key note symptoms which has probably led many prescribers to natrum mur. is: *"Great aversion to bread."* Now this is peculiar, inasmuch as the patient may previously have been very fond of bread, but now bread is disgusting to him, and strange to say, disagrees, as do also most farinaceous foods. We must not infer from this that the natrum mur. patient has no cravings, or no desires. He craves beer; bitter things; salt; and sour things; oysters; fish; and milk. The stomach and intestines are distended with gas, showing the slowness of digestion, due to the chronic catarrhal condition of these organs.

A troublesome symptom, found mostly in old women, but also in men, is *chronic diarrhoea*. Unless you get the right remedy, you may treat these cases unsuccessfully for years; but with such reme-

dies as natrum. mur. (high,) and natrum sulph., you will make many brilliant and permanent cures. I have cured many cases of long standing with natrum mur. The patient is usually an elderly person, with a brown or yellowish complexion, with fullness and discomfort in the gastric region. Following this, there develops a diarrhoea which comes on early in the morning, as soon as the patient *moves* in an attempt to arise. The desire is *sudden* and *urgent*, necessitating the utmost haste on the part of the patient. The stools are thin and watery, without form, and yellowish or brownish in color. As a rule there are three or four stools during the early morning or forenoon, and as many more during the afternoon and evening, but very seldom, if ever, any at night, unless the patient has been very indiscreet during her evening meal. The stools are practically painless, the only premonition the patient has is a rumbling of gas in the intestines, and then the desire, the patient being unable to decide whether gas or faeces will escape (aloe, mur. ac., olean., pod.) Now, my friends, these symptoms may have been present for years, and the patient has become emaciated, and may have many other symptoms—nervous and mental, but they will almost certainly be natrum. mur. symptoms, and a faithful trial of this simple and neglected drug will give you very satisfactory results; but it *must be given high*—never lower than the 30th. potency, and as much higher as you care to go. I have also used natrum mur. in almost the very opposite condition, namely, "constipation." Here there seems to be a deficiency of secretion, in fact, a sensation of great dryness of the mucous membranes of the rectum. The result is a most obstinate constipation. I find this condition in women (seamstresses) of sedentary habits, and nervous temperament, or who become nervous as a result of too close application to duty. The result is a sensation of constriction of the anus, which, combined with the other symptom of great dryness of the mucous membrane, cause an inability to defecate. I give these cases ignatia, as the *acute* remedy, and follow it with its *chronic*, which is natrum mur., and I have had most satisfactory results. I have also used natrum mur. in the obstinate constipation of chlorotic girls—when the other symptoms agree.

When we consider that about 10 per cent. of the total amount of sodium chloride in the body is excreted principally through the

kidneys each day, it is not astonishing that we should find a decided action on the urinary organs. In fact, some persons would have us believe that such serious diseases as diabetes and Bright's disease of the kidneys, may be directly traceable to the ingestion of too large quantities of common salt in our food. If such effects are probable, it seems to me they could only be possible as a result of defective elimination, which would place the ultimate cause at a more remote point.

One point might be noted concerning the similarity of natrum mur. symptoms to those of diabetes, e. g.—behold the *emaciated* form, the *dry mucous membranes*, the *unquenchable thirst*, the shining tongue (sometimes mapped,) the *ravenous hunger*, the extreme weakness, the passing of large quantities of urine, the sickly countenance, and the mental state of the diabetic, and lo! it seems almost as if we were reading natrum mur. from the "Guiding Symptoms."

Natrum mur. cures a cough, when there is a sensation of tickling, either in the throat, or in the pit of the stomach. The cough comes on, or is worse in the evening when lying down and becoming warm in bed, and is relieved by sitting up in bed. I have cured many such cases. I have not emphasized its haemorrhagic tendency very much, because every housewife uses *salt* in case of *"haemorrhage from the lungs"* and many times the bleeding has stopped before the physician arrives. This action of natrum mur. I believe to be purely mechanical.

The sexual organs come in for their full share of catarrhal trouble under natrum mur., but time forbids their mention.

Many other prominent and characteristic symptoms of natrum mur. might be mentioned, but would not be apropos to the subject of this paper. In prescribing, however, we must take the whole patient into consideration. I will ask you to recapitulate in your mind the following points: Remember the *great hunger*, yet *emaciates;* remember the *unquenchable thirst* for *large quantities* of *cold water,* often; remember the use of natrum mur. in the bad effects on tissues cauterized with nitrate of silver, whether in the eyes, nose, throat, uterus, or injections for specific urethritis; remember the "sensation of *dryness*" of the mucous membranes, for this char-

acteristic of the action of natrum mur. occurs on the digestive, respiratory and the genito-urinary system; remember the general appearance of the natrum mur. patient—pale, sickly-looking, emaciated, and the face looks as if *greased* (thuja, psorinum and plumbum.)

In its relationship natrum mur. antidotes: Arg. nitr., quinine and bee stings. Natrum mur. is antidoted by: spirit. nitr. dulc., phos. (bad effects of salt in food); arsenicum (bad effects of sea bathing.)

Natrum mur. is the *chronic* remedy of ignatia, also of apis mel., and capsicum. It is complementary to apis mel., and arg nitr., and follows both remedies well.

Natrum mur. is followed by *sepia* and *thuja*, also by hepar sulph.

Natrum mur. is indicated in persons whose complaints are relieved by a residence at the sea shore.

Natrum mur. enters deeply into the life of the individual, as is evidenced in chlorosis or in pernicious anaemia, when the mucous membranes lose their pink color, and turn yellow, or even white—the cut finger bleeds water—the menstrual flow is simply a leucorrhoea.

In these days when the origin of everything, even life itself, is being diligently sought for, it may be noted that common salt (natrum mur.) most likely plays an important part in that interesting problem—the determination of sex. It is an old observation that "salt-eaters rarely have male issue."

Natrum mur. is a great remedy, far greater than the scope of this paper would indicate. There are many who doubt, and many more who would deny it any therapeutic or curative action whatever. To such, I say, give it a fair and unprejudiced trial, and publish the *failures* to the world.

DISCUSSION.

DR. T. M. JOHNSON: I have been very much interested in the paper; and natrum muriaticum was the waterloo for many skeptics. It is a remedy that has made homœopathy stronger and firmer than and other remedy; because we use it so much in crude form in our food; and we get such beautiful results from it in potency; and if that is true of natrum muriaticum, why not of the other remedies? I have lived in a neighborhood where we have

had two or three epidemics of malarial fever—chill, fever and sweat; and many times our old school confrere has run to his quinine; but if the patients had the constitution which has just been characterized as that of the natrum muriaticum constitution, and if the chill was at 11 o'clock in the morning, particularly if they had been well dosed with quinine, we got prompt results from natrum muriaticum. I never use it higher than a sixth to a twelfth. You do not get the medical result from the crude drug, but you do get it from the sixth and twelfth and possibly from the higher potencies. I do not know for I never used the higher potencies; but I mean to say that I am satisfied that my old materia medica idea is correct—my homœopathy is correct; because natrum muriaticum proves it to me.

DR. W. A. SEIBERT: With me, natrum muriaticum acted very much as the eating of a tomato; I had to learn to eat it. I had to learn to believe that natrum muriaticum could do what I find it can do. I want to say, further, it did something more for me, I believe. When I started the practice of medicine I was thoroughly convinced that homœopathy was true; but I was not so thoroughly convinced that the microscope was not necessary to demonstrate the limit of the divisibility of matter and would help me to explain and satisfy myself that the remedies did the curing. I want to say that natrum muriaticum helped me over that mountain; and it is a mountain for many of us. The higher potencies do act. The first trial that we are very apt to give the natrum muriaticum is to apply it to our malarial cases, as Dr. Johnson said; and from one thing to another natrum muriaticum is simply tried and your results will not come to you until you try the higher potency.

Going into the symptomatology of a big remedy like that, it is impossible to do so in a discussion of this kind; but I want to say that Dr. Fleagle certainly very thoroughly went over the mucous membranes, as far as I can see, and as far as I could think, I cannot add anything further.

DR. EDWARD CRANCH: I compliment Dr. Fleagle on his magnificent paper, and will supplement it in one direction; that is, the direction of the mucous membrane of the ear as being materially benefited in the many cases of otitis media, when its constitutional

symptoms are present. Natrum muriaticum is one of our great constitutional remedies in deafness, both locally and internally.

He also remarked that it is benefited by a stay at the seaside. I am glad to know that; but not long ago I had a patient who was always worse by going to the seaside, and always had more headaches and more catarrh; and on one occasion I gave her natrum muriaticum and it cured her; so we have it indicated on both sides of the case. I gave her the two hundredth potency. It is not always necessary to use a higher potency than the potency used in the proving. Dr. Clark has called our attention to that in the provings of radium, where he has used the thirtieth to make the provings and the thirtieth to cure; and I have known patients to be responsive to the action of natrum muriaticum, even in a low potency. I knew of a case that was cured of the natrum muriaticum symptoms in malaria by eating roasted salt, the crude article. Still, the results are often obtained by the higher potency, the two hundredth being especially beneficial in those conditions.

DR. W. G. DIETZ: About the discharge of natrum muriaticum —the mucous discharge, compared with kali muriaticum—the latter is one of Schussler's remedies, and has a most excellent influence on catarrhal conditions of any part of the mucous membrane of the body. Its discharge is very similar to that of natrum muriaticum, except that it contains more mucous corpuscles. It is apt to be whitish; and where in catarrhal conditions, especially where we have no characteristic symptoms indicative of remedies, kali-muriaticum will often do the work. It follows in the acute condition after aconite and those remedies which we are apt to give in the beginning of acute colds, there may be something in the case that seems to indicate pulsatilla; but natrum muriaticum will often do good work. When emaciation of the neck is very marked in cases of whooping cough, and also in cases of marasmus, natrum muriaticum is apt to be the remedy.

In chronic diarrhoea, which natrum muriaticum cures, it comes so very close to other remedies, especially to alum salts and sulphur there being just that body in the medicine which is characteristic of sulphur and also of aloes; the latter are supplementary to each other. Aloes has that notorious condition in chronic diarrhoea, the instability of the sphincter ani where we can not depend on the thing

to hold up; and also the discharge of flatus—a comparatively small stool urging the patient to go immediately and can hardly wait, and as if he cannot get there, and perhaps does not discharge anything but a small amount of fecal matter and a very little gas. The condition is so close to natrum muriaticum that you can hardly distinguish it. As soon as the patient gets out of bed to move about, he must go to stool there is only one difference, that in natrum muriaticum there is more rumbling in the sigmoid flexure. In both remedies the patient is apt to be worse when he gets out of bed.

In great sneezing, natrum muriaticum should be compared with our great remedy for sneezing; that is, cyclamen. Where sneezing is very excessive, cyclamen should always be thought of. In the night cough, where the patient is better from sitting up, as the Doctor said there is another remedy which we are always apt to think of before natrum muriaticum; that is, hyoscyamus. It is very similar to natrum muriaticum, except that the natrum muriaticum has not the constant tickling cough at night. Under hyoscyamus he sits up, but the relief does not come; and he lies down again. There is another remedy, which, if hyoscyamus fails, will cure the case; and that is theridion.

DR. T. H. CARMICHAEL: If a young lady calls at your office complaining of a crop of cold sores around the lips, and you don't know what else to give her, try natrum muriaticum. Glad to hear Dr. Cranch speak of the use of this remedy in crude doses; because the homœopathic Russian physicians, particularly, a few years ago were curing their cases of malarial fever with teaspoonful doses of the crude salt; and Dr. T. S. Dunning, of Philadelphia, told me that in his former practive in the very malarial region of the lower part of Delaware, he found natrum muriaticum in the third to give very much quicker results than in the thirtieth, or higher; so that the remedy can be used in the lower potencies, and even in crude form.

DR. M. M. FLEAGLE: When I said the remedy is one that needs to be used in the higher potencies, I had reference particulary to the chronic diarrhoea. I am fully aware that natrum muriaticum has been used successfully in various epidemics of malaria in the form of roasted salt. The patient took quite a large dose of it, and was required to drink large quantities of water immedi-

ately, and not eat any food; and sometimes (it is said) one dose was sufficient to cure the most obstinate cases.

In regard to the cough of hyoscyamus, I believe, if I recall rightly, as a rule that cough is attributed to an elongated uvula, which, when the patient relaxes, drops down the patient's throat and causes tickling.

In prescribing natrum muriaticum we must take all the symptoms of the drug into consideration, especially the mental symptoms. Do not forget the mental symptoms; I did not have time to touch upon them; and it was not directly connected with the subject of my paper.

HYDRASTIS; ITS ACTION ON MUCOUS MEMBRANES.

I. B. GILBERT, M. D., PHILADELPHIA.

By way of introduction in presenting and considering the action of this important and useful drug, speaking therapeutically, I shall feel at liberty to draw freely from the literature of different authors in the compiling of this paper, it being understood that due credit be granted. Trusting this explanation may be amply sufficient, we will proceed.

Briefly, in order that its medical history be understood, we shall give the early experience of the profession.

The biography of a medicine in many cases is as interesting as that of man, of which this drug is no exception. Quoting from Hale's New Remedies, the use of golden seal as a medicine dates back into the dim traditional history of this country when only the Aborigines inhabited the continent. It was known to the first white settlers only through the Indian tribes with whom they came in contact. Notwithstanding its great deserved popularity among the whites and Indians at an early day, the "regular" practitioner seemed to look upon it with suspicion, and we find small mention of hydrastis in any of the writings of the early authors, with the exception of Dr. Tully, of New England, Dr. Barton, of Philadelphia, and others.

Dr. Hale, of Chicago, was the first to call the attention of our school in America to this medicine. His first article on the drug

appeared in the "North American Journal of Homœopathy" volume VIII; from this time forward very extensive and complete provings have been made by prominent men in the profession, notably those of Dr. Nichols, having stood the clinical test of all others.

To the indefatigable labors of Dr. Hale in his work on New Remedies, and his numerous writings this drug has been brought before the homœopathic profession, and has been gradually growing in usefulness until at this present day it is a remedy par excellence in its sphere of action, namely, the mucous membranes, in which it stands without a rival in its therapeutic action. Its action on all mucous surfaces is the same, not being confined to any one portion of the body—it is applicable wherever mucous membranes exist.

The characteristic discharge so marked and prominent in this drug is thick, yellow, green and at times bloody, but not so tenacious as that of our well known kali bich., ammonium bromide and others, which are stringy and tough, and also differs from the profuse, thick, lumpy discharge of stannum iod., with which we are all so familiar in our tubercular cases. The clinical deduction, therefore, is that hydrastis is one of the most important remedies we possess for the treatment of mucous fluxes, such as are commonly known as catarrh.

Clinically enumerating in a general way the usefulness of this drug in mucous fluxes, we should note among the most important nasal catarrh of both anterior and posterior passages, with its well known characteristic discharge. In catarrh, whether of the respiratory passages, of the stomach, of the gall ducts, of the intestines, of the bladder, of the urethra or uterus—all of these organs on account of their anatomical construction constitute a large field wherein this remedy can be very successfully applied with almost unfailing results.

For example, in a case of nasal catarrh both anterior and posterior with the fulness which is so marked a symptom here, clogged condition of the cavities with the thick, yellow, lumpy, green and stringy discharge from the nasal mucous surfaces, and having existed probably for months, if not years, as we so frequently find, such diseased conditions will yield to this drug promptly if it

has been properly selected and used perseveringly; most of these cases are apt to be neglected while under treatment. This drug is of very little benefit, if any, in acute catarrhal cases with existing fever; here hydrastis yields to aconite or gelsemium until the so-called first stage has passed.

The power of hydrastis is pre-eminently manifested upon the gastro-intestinal tract. It is tonic in character, restorative and soothing in its action. It promotes the appetite, increases the secretion by its action on the mucous surfaces, both gastric and intestinal, and conduces to a restoration of the normal condition. It increases peristaltic action and general muscular tone in the tissues of the stomach and intestines. Its use was highly lauded by Dr. Hughes, of England, for constipation, for which he considered it a precious remedy, far superior to nux vomica usually prescribed. Its widest range of therapeutic action is admittedly upon the stomach in functional disorders of that viscus. Quoting from Ellingswood Materia Medica, it is the most natural of stimulants to the normal function of digestion. Its influence upon the mucous surfaces renders it most important in catarrhal gastritis and gastric ulceration. It supersedes all known remedies as a local, and also as a constitutional tonic when this condition is present.

Quoting the opinion of Dr. Scudder on this same subject—in anorexia, indigestion and general debility, arising from a languid or atonic state of the stomach it is unsurpassed, restoring tone to the stomach, promoting the appetite, and acting as a general restorative. It may also be employed in those cases of chronic gastritis and chronic irritation of the stomach with altered secretion, which constitute the worst and most persistent form of dyspepsia.

I refer to a case of much interest that had been under my own care for a number of years at various intervals. The patient, a male of middle age, robust in appearance save his complexion, but very intemperate in the use of strong drink, which brought about a chronic catarrhal inflamation of the stomach, the facial expression being dull, heavy, yellowish white, pasty looking, not unlike that for which we would select the well known mercurius or podophyllum—the tongue, also large and slimy looking. This case received the class of remedies usually prescribed in such conditions—viz: nux vomica, mercurius, podophyllum, pulsatilla and sulphur, without

the least benefit whatever. In casting about for a remedy from which I might expect good results my attention was drawn to hydrastis on general principles, but especially on account of the large amount of the characteristic mucus expectorated and also passed per bowels. The stools being literally wrapped in mucus or slime as described in the patients own language. I immediately put the case on hydrastis, which permanently cleared up all the symptoms above enumerated in a short period of time.

We have many other drugs more applicable and of wider scope in their usefulness in intestinal conditions where hydrastis is not indicated, but where hydrastis is indicated it stands pre-eminent.

In jaundice caused by catarrh of the bile ducts from functional disturbances of the hepatic cells, due to a congestion of that organ, causing an excess of mucous secretion clogging the lumen of the ducts, thereby inducing a retention of bile, apparently mechanical for the time being, which is evidenced by the discoloration of the skin, faeces and urine; this condition will readily yield to the use of golden seal.

In closing with a few remarks on the efficiency of its use upon the mucous membranes of the genital organs, especially those of the male in specific urithritis.

It is not from force of habit, but from clinical results obtained that I consider colorless hydrastis surpasses in both efficiency and pleasantness all other remedies in the treatment of gonorrhea when used locally as an injection. It does not stain the clothing and it is not painful. I do not mean to convey the idea that hydrastis is a specific, but I do say that when properly used, and in connection with the indicated internal remedy, it will cure your cases readily.

The proper way to stop the discharge which is a symptom only, is to remove the cause upon which the leak depends, *i. e.*, to correct the congested and inflamed condition of the mucous membrane. This can be done satisfactorily by the injection of hydrastis after the acute inflammatory stage has ceased, which is usually about seven days.

Much more might be said about the therapeutic uses of hydrastis, but let this serve as an outline for some of its uses, knowing full well that many more will be brought out in the discussion.

ARSENIC: ITS ACTION ON MUCOUS MEMBRANES.

O. S. HAINES, M. D., PHILADELPHIA.

One of the good results of the report of this bureau will doubtless be the discussion of various plans and methods by which the student of drug action may obtain clear ideas of the effect of various drugs upon the different tissues of the human body. We think, for example, that the question: "How does arsenic affect the mucous membranes?" should be answered in such a manner as to produce data from which the inquirer may deduce rational and effective uses for that drug in therapeutics. Otherwise of what use is any answer? It is our opinion that to do this one must go for his information to the day books of provers and to the authentic records of poisonings.

But the completeness of the answer to such an inquiry will depend more than you may have thought it would, upon whether one really believes that the theory of "similia" explains the modus-operandi of the curative effects of arsenic and similar drugs. Not holding such a belief, one will probably class arsenic among the alteratives; those drugs which, at times, have the power of modifying nutritive processes within the body, and therefore sometimes cure or alleviate sickness. And, one whose therapeutic deductions are for the most part based upon this or similar generalization, will spend little time either in the study or statement of pathogenetic effects, because these are not necessary parts of his method of therapeutic procedure. The student who really believes that the theory and practice of "similia" enables him to get the best there is to be had out of drug effects, will realize that such an inquiry such as has just been mentioned, is too big a question to be answered completely in the few minutes at our disposal today. To whatever portion of the body one permits his mind to turn, one recalls mucous membrane effects that have enabled us to utilize the beneficent curative action or arsenic in many different ailments and morbid states. Therapeutic uses of the drug which we should hardly have come upon had it not been for the illumination and help of the law of similars. We may conclude that arsenic affects principally the mucous sur-

faces of the eyes, nose, mouth, throat, stomach, intestines and lungs. It affects other mucous surfaces, but these will suffice for our answer today. Applied directly to any mucous membrane, arsenic might act as a caustic: *i. e.*, has the power of producing disorganization, is destructive. Its corrosive action is, however, not very rapid, nor are the *ulcerations* usually produced, notably deep ones. And we believe it is agreed that we cannot attribute its destructive effects upon mucous surfaces, solely to simple chemical solution of the tissues; for no matter how the drug gets into the human system, it shows an especial affinity for mucous membranes. Administered so that it enters the circulation, we witness similar destructive effects upon these membranes. Effects which cannot, in this instance, be attributed solely to the caustic action of those minute portions of the drug which may have reached the affected membrane, through the processes of absorption and excretion. It is interesting, even if you doubt its utility to refer to the widely accepted belief that the initial disturbance in this destructive action, is not chemical, but rather a peripheral vascular paralysis. A paralysis of the capillary vessels. In the case of the stomach and intestines, regions where so often the first arsenical effects are seen, it is a paralysis and subsequent dilatation of the capillaries of the mesentery, causing first congestion with exudation of the watery elements of the blood in great amounts, then inflammation of the mucosa and finally ulceration, and hemorrhage when the capillary vessels burst. Arsenic then destroys the vitality of the tissues; and, therefore acts as an *irritant* rather than in a purely chemical manner. Death may result, of course, from destructive ulceration ultimately; but death in the more acute poisonings certainly occurs more frequently from annihilation of the ganglionic nervous system. We may read in our toxicological text books, of children poisoned by arsenic, in which no deviation from the normal was noted at the post-mortem in neither the stomach or intestines. Within six or seven hours death ensued, preceded by the phenomena of cold surface, sunken eyes, feeble sighing respiration and cardiac weakness. Death in these instances surely did not result from any destructive action upon mucous membranes. The destructive action of arsenic is not confined to the vitality of mucous membranes or any other one tissue. It is a feature of all arsenic states, that low-

ered vitality, weakness, exhaustion, prostration and lowered cardiac tone are prominent parts of the picture.

The action of arsenic upon the mucous membranes of the eye and its appendages is manifest to the subject, first, by unpleasant *sensations*, which may be briefly summarized as follows. These are really not numerous.

There is *burning* and *itching*, these being more common in the provings and poisonings used in this study.

There is *stiffness* of eyes and lids. This sensation is a common one.

Smarting comes next in importance, with its modifications such as sensation as if *sand* were on on the lids, or as if the eye was exposed to irritating *smoke*; or *prickling* or of *heat.*

The remainder of the unpleasant sensations may be described as either—*tiredness, heaviness, soreness* or *sensitiveness*—and there you have it.

This makes a good beginning and we may say that the condition accompanying these sensations is one of irritation progressing to inflammation. Because.

Secondly—There is *diffused redness* of the conjunctivae.

There is redness and gumminess of the lids.

There is swelling and agglutination of the lids.

The mucous surface of the lower lids looks actually granular.

Now *Vision* is blurred for distant objects, and the continued looking at any object is followed by blurring of vision. And this is relieved by *rubbing* the eyes.

It seems to me from this that it would be a reasonable deduction to say that the lids suffer more than the eye itself.

In the third place we must notice briefly the most common general accompanyments of such arsenic eye effects.

We note that *dull frontal headaches*, increasing to throbbing were present.

That the mind was dull and listless and the face hot, the body feverish.

That general indisposition of the physical and exhaustion of the nervous systems were complained of.

There was puffiness about the eyes and neuralgic pains in teeth of lower jaw and in infraorbital region of the left side.

Stiffness of the neck and coryza.

Nausea and vomiting.

It looks to me as if these eye effects must be a part of a general systemic derangement rather than mere local irritation. And do we not find in practice that such is the case when arsenic cures?

The primary effect of arsenic then is to produce an acute conjunctivitis, but we submit that this bare statement is less satisfactory than the plan just briefly outlined.

Taking up now the nose, mouth and throat—The action of arsenic upon the mucous membranes in these regions is manifested to the subject, first, by unpleasant sensations:

There was *burning* in the nasal fossae, the left especially.

A sense of nasal *obstruction* and much *sneezing*.

We recognize that this is actual inflammation, because we note that the nostrils were actually *obstructed*, there was actual *watery coryza*, there was redness of mucous membrane and *bleeding* from the same.

Nothing is said of deep ulcerations.

Again it is interesting to note the general disturbances that accompanied. Malaise, headaches, general weariness and stiffness of muscles of necks, thighs and lumbar region. Chilliness, feverishness and easy sweating at night. Aching in the frontal region and root of nose. Dry tickling cough and sense of oppression in chest. Copious stools.

Now, the primary effect of arsenic must be to produce an acute rhinitis, but again we submit that the bald statement is less satisfactory and less enlightening than the plan we are following; and the therapeutic deductions that are possible must be plain to everyone.

When we take up the effect of arsenic upon the mucous membranes of the mouth and throat we note a similarity to the previous effects already mentioned.

The subject is made aware of the arsenical effect by painful sensations: The mouth feels *hot* and there is *burning*. Lancinating pains are felt in the teeth, notably in the teeth of the left upper jaw. The tongue feels dry and burning. There is a dry feeling

in the back of the throat and a sensation of roughness and constriction.

That this is a real inflammatory change of moderate severity is made apparent to us by the following observed data:

The mouth appears sore and the gums are swollen and bleed. White spots or even strips of white membranous material are seen. The tongue is patched as if scalded. The velum is red. There is salivation. The mucous secretion is increased as we see viscid, tenacious or semi-solid white mucus in post-nares.

The concomitant general complaints closely resemble those previously mentioned. The subject is feverish, chilly, weary and easily fatigued. There is muscular stiffness. Great thirst. Coryza. Hawking of mucus from post-nares.

Now it is worthy of notice that such arsenic effects do not always pass off with the cessation of its administration. It is recorded that years after certain of these effects persist. The subject has sensitive mucous membranes and takes cold easily. Hawks thick, white or yellow mucus from post-nares constantly. Has dry crusts in the nostrils and nose-bleed. And suffers from dry teasing coughs, produced by deep inspiration, by dust, by a close atmosphere.

We have possibly neglected our arsenicum in the treatment of chronic states of naso-pharyngeal catarrh produced by repeated acute catarrhs. The persistence of these conditions, as brought out by this kind of study suggests that fact to one.

When we take up the effects of arsenic upon the mucous membranes of the respiratory tract, we are impressed with the clearness and brevity of the resume. The subject is made aware of its effects in this sphere by *oppression*, a feeling of stuffiness behind the sternum attended by some pain, notably in the right side of the chest. A feeling as if smoke had been inhaled; and this causes coughing.

Deep breathing intensifies this oppressed feeling and causes renewed cough. The voice is husky and hoarse and the cough is mostly dry, irritative and continuous.

A *teasing* sensation in the chest, producing a *dry* cough, which is renewed by deep inspiration, by dust or by a close atmosphere. Occasionally the cough may sound loose, without notable expectoration.

The resemblance to the effects of pulsatilla comes at once to mind,

especially in reference to the odd sensation of inhaling irritating smoke. This is a real inflammation, however, as we learn from the recorded findings. The bronchial mucosa is red and even covered with reddish mucus. The epiglottis and trachea are reddened. The lung tissue, on section, is bright red, glossy, smooth, like the first stage of a pneumonia, yet no exudation nor effusion is seen. Lymphosarcomata are found in the lungs of miners who have inhaled arsenic in an insoluble state, the bronchial glands swelling and enlarging.

It is seen that arsenic produces a dyspnoea during its inflammatory action upon the pulmonary mucous membranes, a dyspnoea allied to that of emphysema and asthma, with dry cough.

If one gets from such a study a clear first idea of the dyspnoea and dry irritating cough of arsenic, it repays. These effects seem to be irritation and inflammation analogous to its mucous membrane effects elsewhere. The final failure of respiration must be due in arsenic, to general exhaustion.

And lastly, taking up the gastro-intestinal mucous tract, we note that here are found its most active and most intense mucous membrane effects. It will not answer to simply announce that it produces a severe gastro-enteritis. This is a fact, but it gives us no useful data.

The subject is made conscious of the effects of arsenic upon the mucous membranes of the stomach, by:

Sensations of nausea, produced by even the first bite of food; increasing to vomiting.

By an intense thirst, by burning, acid sensations within the stomach. The fact that this is a real inflammation is shown by the epigastric tenderness and by the post-mortem finding of red patches and abraded spots upon the gastric walls.

In the intestinal canal, its effects upon the mucous surface are manifested by, first:

Sharp abdominal colics, followed by loose stools. This feature is described as either cutting, burning, pinching or griping pain, followed and relieved by the expulsion of gas; and, this in turn is followed by one type or other of its loose evacuations.

By burnings at the anus or by tenesmus or by excoriated feelings at the anus.

The intestinal objective phenomena are very striking and interesting:

There is marked gaseous distention and increased peristalsis. The loose evacuations that follow the colic and flatus are various in kind: The stool may be natural in its first part and simply relaxed in its latter portion, indicating simple irritation. The stool may be copious, watery, like rice-water, accompanied by the exhaustion and appearance of collapse that we expect to see in our cases of real cholera.

The stool may be dark, semi-liquid and expelled with force.

The stool may be muco-purulent or bloody or even pseudo-membranous.

The post-mortem examinations give us data pointing not so much to a corrosive action, but rather to an effect similar to that seen after phosphorus or similar to the inflammatory changes witnessed in typhus or typhoid fever. The intestinal mucosa is patchy red, the solitary glands are large and numerous. The denuded spots are ulcerated down to the peritoneal layers, the latter being thin and easily torn. The mesenteric glands are swollen and black. In the colon ulcers are found that have progressed through the mucous layer.

Now, the accompaniments of such a gastro-intestinal picture of mucous membrane inflammation, are those of fever, with sweats and great thirst. Headache and weariness and muscular aching are prominent and there is much evdence of vital exhaustion.

DISCUSSION.

DR. EDWARD CRANCH: The paper has shown the pure proving; and to our minds it needs no guide to tell us that these are the indications for treatment in cases conveying to our minds the same symptoms; and we will find, of course, if we have had any experience at all in the practice of medicine, that arsenicum is a remedy that gets there—the greater the posion, the greater the remedy; and its indications are very clear—its prevalance of burning symptoms and burning sensations in all of the mucous membranes, and at the same time the sense of dryness, followed, if it is prolonged, by the acrid and more or less profuse discharge, are all more or less characteristic of the arsenics, and we use them

many, many times in the treatment of disease, especially, as Dr. Haines remarked, in the treatment of malarial and typhoid conditions, in dysenteric conditions, all with the profound prostration and weakness characteristic of the arsenic patient.

As we find, further (what has not been touched upon here and still does not come directly in the line of the patient, but is one of the great keynotes of the remedy,) the patient wants to be kept warm, and wants to be covered up. That condition is a result of the exhausting effects of the action of the arsenic on the mucous membranes and the tracts carrying off too rapid elimination, and also causing a paralysis of the vaso-motor system, making the skin chilly; and the patient is only relieved by being bundled up warm and occasionally by taking warm drinks; but the arsenic patient does not tolerate drinks of any kind pleasantly; although he craves a great deal, he takes as little as he can, on account of the distress that it causes him.

DR. E. C. BLACKBURN: If I am not out of order, I would like to report a case; although it does not come strictly under the field of arsenic on the mucous membrane.

About two and a half years ago when going to Williamsport, I dropped in one day to see a man about whose life I had known very little during the last ten years; and when going to his office (he was a dentist) I did not recognize him. When last seeing him he was a healthy man, with flushed face, a man probably 35 to 40 years old, and one of good habit; and when I went to his office, I inquired if the dentist was in, and he said that he was the one; and I was astonished to see him. He had been in Philadelphia for about three or four months under treatment for some skin trouble, without any benefit; in fact, his trouble was exaggerated. He had been treated for intestinal irritation; that is, his symptoms, as they told him, had come from intestinal irritation. He manifested around the rectum and over the genitalia and into the groin and down the thigh to the knees, a vesico pustular eruption; and in six months' time he had lost about fifty pounds. He was compelled to give up his work when he went to Philadelphia, and remained most of the time he was there under old school treatment; and he was given (he showed me prescriptions for probably fifteen to twenty local applications, many containing mercury, and internal medi-

cines; his sphincter was dilated, and the man was in a thoroughly exhausted state.

He asked me if I would not examine into his condition; and he had some salves with which he was simply literally covered, from the hips down to the knees. He asked me if I would not prescribe for him; but I did not care to do so and told him he had better keep on with the treatment; but he came to me a few days after that in agony and he manifested to me symptoms of intense burning, itching, extreme exhaustion; many times at night he would get up ten or twelve times to bathe himself with some local application; and the man was in an extremely exhausted condition. He was unable to follow his usual occupation, upon which his livelihood depended. I gave him arsenic 6x, and directed that he take it every three hours; and gave him a little carbolic acid, probably 10 drops in a pint of water, for him to bathe his parts; and gave him a little dusting powder to follow. He reported next day that he had had a very much more comfortable night. In two weeks' time he had absolutely recovered from every symptom that he had in his body. He kept on without any interruption for six months, and there was a return of his symptoms in a modified form. He took arsenic probably for three months; then stopped it and there was a return of the symptoms, and he started in with arsenic 6x again and his symptoms subsided within ten days; and he has been for a year and a half in perfect health; he has not lost a day's work since; and he today is in perfect health. He has regained all his weight, and he is above normal—is normal.

DR. D. S. KISTLER: About ten or twelve years ago I was called to see a man who had taken Paris green; but he had no mental anxiety, no nervous restlessness. I rise to ask whether in the classic cases that have come under the observation of the different men, the restlessness, that is characteristic of arsenic, and the anxiety and fear of death, are primary or secondary condition?

DR. O. S. HAINES: I think they are secondary. I made no reference to that. It does not appear, in a high degree in any of the provings. Weakness and malaise, weariness, heaviness, stiffness and a general febrile condition are more noticeable than breathlessness or anxiety.

DR. W. A. SEIBERT: One statement in this paper has im-

pressed me very pleasantly, because the doctor advocates the matter of using the hand-books—with a pencil and pad and learning your symptoms, your remedy, getting your picture of your remedy by going from one prover to another—in that way selecting your remedies for your symptoms; and in that way my attention was drawn to still another method (we all have different methods of studying our remedy and learning how to apply them.) Arsenicum as a mucous membrane remedy, of course, is a very valuable one. I refer to it in my paper.

DR. M. M. FLEAGLE: The paper is excellent and one (as you just heard) which is rather hard to supplement with anything special; and yet we all realize that in the scope of a 15-minutes paper for a large drug like arsenic you cannot do the drug justice.

I simply want to say that in tubercular cases, when you find the emaciated state, the waxy condition, the shortness of breath, the patient can scarcely walk probably five yards without being required to sit down and rest; he is chilly, the least draft causes him to shiver, he wants to be bundled up as one of the characteristics; in addition, he has that oppression which you have all heard of—arsenic, or arsenic iodide, will give that patient probably as much relief as any remedy that can be given; and when he is relieved, if you will follow that arsenic by kali carb., you will probably be astonished at your results. Cases that have seemingly gone beyond the hope of medicines seem to gain in flesh, gain in weight, and practically recover. I will not say they will stay well the balance of their lifetime; but they get better.

In connection with this oppression of breathing, we find this is a symptom associated with Bright's disease; that arsenic will relieve about as quickly and permanently as any drug I know. I simply want to call attention to its effect on the mucous membranes of the lungs and kidneys.

DR. S. W. S. DINSMORE: I find it particularly indicated in young children—children too young to tell their wants to the physician; who have that restlessness and thirstiness—want to drink everything that comes in their way; with the pale skin, perspiration.

CALCAREA CARBONICA; ITS ACTION ON MUCOUS MEMBRANES.

Z. F. MILLER, M. D., PITTSBURGH.

Some time ago I read a paper before this body. When I got through, a gentleman, for whose opinion I have much respect, said that it was "interesting." I appreciated that compliment; I set out to make it instructive, but when I learned that it was interesting, I instantly concluded that it was very unconventional, something out of the ordinary in medical literature. If in trying to be instructive I become interesting. I feel that I can very well forego the former in attainment of the latter, since to be instructive is to be prosaic, while to be interesting smacks a little of cussedness, of which I hope I am quite capable.

I have every reason to respect the effect that calcarea carb. has upon the mucous membranes. A cure of a suppurative inflammation in a tear cyst about twenty-five years ago still brings me a goodly number of people from twenty-five miles down the Ohio river. The young man, then a baby, his mother, his cousins and his aunts and all the neighbors come, and I with true medical instinct allow it. In the experience I struck but one snag. One family had five consecutive cases of typhoid fever that required attention for three months. I lost one of the cases, 20 per cent. I read all of Thackeray's novels while riding on and waiting for trains. May be if I had read fewer novels the twenty per cent would have survived. At any rate, I always remembered that calc. carb. cured a case of dacryo cystitis.

One would hardly think of calc. carb. as a remedy in anything, if the peculiar build of the patient was lacking, and this is one of the masterly strokes of the founder of our system.

It produces ophthalmia. One would think that an ophthalmia was an ophthalmia whether it was produced by a foreign body, tak-

ing cold; in the new born or scrofulous. In either of these conditions calc. may be indicated. If we are to believe anything we must stick to the law of similars, for who can say that calc. produces anything but scrofulous ophthalmia. Would it not be nearer the truth to say that the ophthalmia is scrofulous and that a chilling, a foreign body, aggravated the condition, whether in the new born or otherwise. Would we give calc. for a gonorrheal ophthalmia? Would we give calc. for a simple eye inflammation, would we think of it in inflammation caused by a cinder imbedded in the conjunctiva?

In the nose there are many peculiar symptoms. Fluent coryza with headache. Frequent sneezing without coryza, or with dry coryza. Dryness of the nose or stopped by fetid yellow pus.

Catarrhal symptoms attended with great hunger, a sort of a metastasis from the nose to the abdomen, as when the coryza ceases colic sets in. Sore ulcerated nostrils.

At night the nose is dry and obstructed, while in the day time it is moist and free.

The alternate nasal and abdominal symptoms is the characteristic. I have a peculiar symptom. If I wash my head or sit in a draft, my nose stops up, but if I lie on my left side, in less than a minute I breathe freely through both nostrils. If I turn to the right side or back, the nostrils close at once. Under calcarea carbonica the mouth is slimy, blisters on the inner surface of the cheeks and tongue. Canker sores, especially during teething.

Inflammatory swelling of the palate and uvula or tonsils, with sensation as if the throat were constricted when swallowing, pains extend to the ears.

The alimentary tract is rich in symptoms, but I cannot make out that they refer to the mucous membrane.

There is burning in the urethra during micturition.

There is an aching in the vagina. Stinging in the os uteri. Leucorrhoea like milk with itching and burning. Burning soreness in the female genitals.

There is dryness in the larynx with whistling when lying down evenings. Roughness and rawness in the larynx.

In the lungs it produces a yellowish expectoration, putrid odor, tasting like ink; salty.

Cough is caused by tickling, like a feather; a sensation as though a plug moved up and down in the throat; inspiration; playing on the piano; eating. Expectoration salty, sweetish, muco-pus that sinks in the water, leaving a trail behind it.

Coughs especially at night.

Coughs with pain as if something were torn off in the larynx; roughness and soreness in the chest.

The oyster shell causes a congestion of mucous membranes every where that goes through all the stages of active inflammation, muco-purulent secretion to ulceration.

Isn't it a glorious thing that we can differentiate. When the representative of a drug house shows me a beautiful pill or mixture I tell him I would not know when to give the combination, but I do know when to give each drug separately. My chest goes out and chin up as I wait to see the color come into the face of the aforesaid agent. I then proceed to tell him the charcateristics of each of the contained drugs in the dope there by giving him an idea to carry with him.

Calcarea is not the only remedy that may be used in ophthalmia, but it is the only one that can be used in a certain kind. It is knowing the kind that puts us to the right in prescribing any remedy.

Aconite; rhus; puls; argent. nit. are also useful in ophthalmia, and they might all be bunched and given at once if we wanted to be ultra scientific, but since we want to be ultra correct and righteously specific and make the punishment fit the crime, we are compelled to find out which one is to do the work and put it at it. We all know just how troublesome it is to do that, and that very trouble and laziness is tugging at the hemp that tolls the knell of therapeutic medicine. This is not kicking anybody in the pants, it is a confession, with a hope of repentance.

The fluent coryza with headache has its opposite in the headache from suppressed coryza found under bryonia. So fas as I know it stands alone in the peculiarity of metastasis to the abdomen causnig colic. Metastasis is a funny thing, I cannot comprehend it, I wish I could. I am absolutely cetrain that is is a phenomenon of disease. We prate much of the sympathetic nervous system, about

impressions being conducted along nerve trunks to brain centers and then reflected to some other part of the body, there to devil the life of the patient. When you stop to think about it, it is a damned queer proposition. I do not ask any pardon for the expression either. It would probably be all right if we did not have to harmonize things. What kind of an opsonic resistance is it that changes a coryza into a colic?

There are several remedies that have hunger with the suffering. Psorinum is hungry during the headache, and phos. is hungry during the chill. Nux. vom. and amm. carb. have the same dryness of the nose at night; fluent coryza during the day.

The sore mouth may be compared with that of sinapis alba and mercury. In its sore throat, the pain extending into the ear is something like lach, its other symptoms are much like many other drugs.

Elaps is the only remedy beside calc., having aching in the vagina. Elaps aching occurs before the menses. Under calc. there may be itching, inflammation, leucorrhoea or hemorrhage with the aching.

No other remedy has the ink taste of the expectoration of calc.

Silicea has an expectoration that sinks to the bottom and spreads like a heavy sediment. Sanicula has large cheesy masses sinking in the water. Calc. is the only one that leaves a trail behind.

I can imagine the smile that would disturb the placidity of a face firm with profound wisdom, when asked to consider an expectoration that leaves a trail as it sinks in the water. Such trivialities are not for wisdom. Wisdom sweeps the whole fabric of therapeutics aside and leaves the patient to nature and the nurse.

I once cured a woman that was fair, fat, possibly forty, that had the aching in the vagina.

To be able to tell a lie skillfully is to be in possession of a rare accomplishment. I sometimes think I must be a gifted liar as to quantity, but as to quality, I seem to have the misfortune to be caught at it. The other day I met three gentlemen who are recognized by the bags and boxes they carry. The meeting was in the smoking room of an elemosinary institution. While I was gathering strength and inhaling the curling aromas of Wheeling fatstems, one of the gentlemen told me, for some unaccountable reason, that

he had filled up a bottle of podo. ever since homœopathy has been a known quantity to him and he "gets results." The funny part of it was, a gentleman who also makes his millions by the healing art suggested that the next time the "filler up" had occasion to use podo, he should medicate the pills with alcohol and see whether he did not get just as good results. It was even insinuated that there was no medicine in the podo. bottle at all. Now, here have I been all these thirty-two years filling up, not only the podo. bottle, but many others, the while telling people and the profession that I was giving medicine, when according to the gentleman second named, I have not been doing any such thing. I must confess, however, that this has nothing to do with the burning in the urethra produced by calc. carb., but is it not a burning shame that I feel in my conscience, if no where else, that I should, since 1877 skilfully deceive, and be caught with the goods in the fall of 1909. But calc. has burning in the urethra just the same and I wonder if you went to the "six best sellers" in the immediate neighborhood and came away with a caloric, whether calc. carb. would smother the flame. We have seen that calc. produces metastases, hence it does not require a wide stretch of the imagination to see a transfer from an aching vagina to an epididymis if it belonged to a subject fair, fat and possibly forty. If perchance calc. should cure, we would witness the marvelous phenomenon of the house of Ostrea Edules overcoming the (w)hordes of Gonnococ. and more power to it.

There is nothing in nature that has the ghost of a show for its white alley anymore. If a Klebs Loefler wants to supplement the Malthusian doctrine, up jumps antitoxin and kills him every time. Diphtheria has been "stamped out" dozens of times. It is awful. That old Klebs-L. is a forgotten entity, calc. carb. is no snide either. I once saw a child, fair, fat and four, staggering around the room while he choked with membranous croup (which our good friends in the public safety building say is the same as diphtheria) recover while taking cal. carb. 200th. His mucous membrane was affected, and we are talking about mucous membranes. But according to our friend in the smoking room he got no medicine, and since it was before the days of antitoxin, he must have just got well. It is an awful jolt to one's egotism. Then there is the cough with

whistling, putrid expectoration, sweats and other symptoms of tuberculosis. But even the tubercle bacillus is extinct. Open air and eggs and milk so swiped that fellow that his existence is mere memory. The state spent hundreds of thousands of dollars, but it bagged the game, and now a fellow with consumption is one of the highest salaried attractions in the side show and hard to get. We might as well strike the chest symptoms of calc. off the book so far as their future use is contemplated, but fearing that one or two might have escaped the state dispensary, you might do well to remember that calc. produces a dryness in the larynx with whistling when lying down; roughness and rawness in the larynx; yellow, putrid expectoration tasting like ink and salty; sweetish muco-pus that leaves a trail as it sinks in the water. There are two exaggerated egos that are not in Matteawan. Syphilis and smallpox defy diligence and dilletante alike. But there is "something just as good." Syphilis, from being a scourge four hundred years ago, when, as Draper says, Pope and peasant and all between had it, has now in this aviating century become ancient history. Smallpox, by reason of the strenuosity of Jenner and Dixon, has shriveled to such proportions that the whole of it could be buried in a pit on the end of the nose of one of its earlier victims, showing that "something just as good" quite equals the real thing. Leaving levity aside. With all these effects of calc. on the mucous membranes, no man that ever brewed a bug can tell why they are as they are. There is still something that the microscopist can not find out, never will find out. It is that unfindable thing that hands you what is coming to you and you get it straight if you don't mix it yourself or have it mixed for you. A little bit of syphilis; a little bit of clap; a little bit of scrofula; a little bit of tuberculosis added to gluttony; whiskey; tobacco; venery and greed, are the foundations upon which our profession rests for bread. The institutions we foster are the dreadful monuments to human folly and our skill, be it little or much, is nothing but the pulling of scabs from putrid sores. I am sorry to say this, but the truth, as I understand it, compels it. Medicine and religion busy themselves caring for the unfit, whereas it is the fit that should be nurtured. Instead of studying the effects of remedies upon mucous membranes we

should see to it that mucous membranes are made that need no repairs. The mission of the man versed in our lore should be to weed out that which chokes the growth of sturdy stability. Until that is done we will continue to feed upon the husks of creation and our bellies will be big with the fodder of dry rot.

THE MERCURIUS MUCOUS MEMBRANES AND COMPARISONS.

WILLIAM A. SEIBERT, M. D., EASTON.

I have been asked to write a paper on "The Mercurius Mucous Membranes and Comparisons." The vastness of this subject makes it impossible to present a compilation that would do the matter justice in the limits of a paper. It practically comprehends every mucous membrane disease of every mucous membrane of the body. We must, therefore, define some limitation for ourselves. The dysentery of mercurius and comparisons has been suggested to me, and it shall be the real theme of this paper, treated from the standpoint of the materia medicist.

In the first place mercurius would include no less than ten distinct remedies, all of which have a very similar general action, more or less intense, but each of which possesses a distinct individuality. We shall, therefore, limit this paper to merc. sol. and merc. viv., whose similarity is so great that no distinction is usually made.

Again, a mucous membrane study is apt to resolve itself into a physiologico-pathological consideration—a very useful help for learning Materia Medica, being explanatory of the presence of many symptoms, but this might not satisfy some other and probably more characteristic symptoms: e. g., the night aggravation of merc. sol., or the classical distinction of the right-sided sore throat of yellow iodide, and the left-sided sore throat of red iodide, symptoms that must enter into a comprehension of the "genius" of these remedies. Furthermore, the latter fact emphasizes the ex-

istence of a distinct individuality for each and every one of the mercuries. We shall, therefore, limit the paper arbitrarily to the dysentery of merc. sol. and merc. viv. and comparisons.

A study of the mercurius dysentery, brought into relief by comparison with the dysentery of other remedies accomplishes the ulterior end of learning our Materia Medica; and may I be pardoned for any corresponding digression from the purpose of our chairman, to make this a pure mucous membrane symposium.

A further prefatory explanation is necessary. The name of a disease, or a pathological name used to designate groups of symptoms which have frequently been observed in combination, is used only for the purpose we here intend, viz., to aid in individualizing our remedy. The old warning must be sounded, however, that homœopathy does not treat diseases, it is guided by the manifestation of disease, viz. symptoms. It, by no means, disregards pathology, but it does discountenance specific medication for pathological abstract names. We must go still farther and remember the fact that a mucous membrane condition may be cured by a remedy not at all classed among the mucous membrane remedies, and never suggested, but by an accidental similarity of symptoms whose corresponding pathological state has not been produced in its provings.

The classical symptoms of dysentery may be enumerated as follows, regardless as to whether catarrhal, amœbic, diphtheritic or chronic in variety:

Stools: mucus, muco-pus, blood; or fluid and yellowish-gray; or fluid and frothy, or semi-fluid, yellowish or brown, sometimes with mucus and undigested food, blood, pus or necrotic shreds;
Frequent generally;
Scanty or profuse;

Tenesmus;
Tormina;
Tenderness along colon;
Abdomen flat and resistant;
Flatulence;

Tongue furred at first;
red and smooth and glazed later;
or dry and fissured;

Fever;
Thrist;
Nausea and vomiting;
Pulse frequent.
Rapid emaciation;
Marked prostration.

Any combination of these symptoms, however fragmentary, may be dysentery.

Now, remedies that have been known to produce such symptoms, however fragmentarily, might be indicated for the cure of dysentery at some time or other. The remedies that are suggested by these symptoms however are: merc. cor., hepar, nitric ac. phos., puls., and sul. which would be thought of in comparing the remedies most closely allied to merc. in their entirety; and acon., apis, arg. n., ars., bapt., bell., bry., canth., caps., carb. v., colo., dulc., fer. p., ipec., kali bi., lyc., mag. c., nux v., rhus t., verat. which are classed as mucous membrane remedies; and aesc., aloe, arn., cham., china, cist., colch., collins., cupr., ham., iris, lach., plumb., podo., rhus gl., zinc, having recognized dysentery symptom combinations. Indeed, every remedy of our Materia Medica could be incorporated into this study, contrasting their difference, because the homœopathic idea would not make it inconsistent to employ any known remedy for dysentery, if a similarity of symptoms were to arise.

Comparing the essential features of these, not with each other, but with the merc. sol. dysentery solely, should make a comprehension of the peculiar dysentery of merc. sol. a distinct fixture in the memory, if anything ever can do so, and should furnish us with excellent partial pictures of the various remedies so compared. This is the object.

The question arises how to present these comparisons so as to enlist your interest, make it instructive, and keep it from having a

soporific effect. Contrary to the opinion of our more skilful prescribers as well as the aspersions of the old school, the expert physiological prescriber, the user of the combination tablet and the confirmed empiricist is not necessarily a non-believer in the law of similia at all. At heart he may be as "true blue" in his belief as the most eligible I. H. A. candidate, but his knowledge is deficient. He would like to learn, remember and apply the homœopathic materia medica if only he could acquire a knowledge of the "genius" of the remedies. To help in overcoming this apparently insurmountable barrier and most important obstacle to the still more general adoption of homœopathy, we shall still further limit this paper to a mere elementary consideration of the dysentery of merc. s. and merc. v. for the purpose of developing the pictures of the various remedies.

The analysis and classification of the dysentery symptoms of the various remedies is patterned after Hering's "saw-buck" method of classification for prescribing purposes. On account of the complex nature of our subject "dysentery," which has been suggested for our consideration, our modification is arbitrarily adapted for the sake of convenience. Our object is not now to amplify the excellent method of general materia medica study that this suggests; for whether any single symptom, condition, altered function or disease of any remedy in our materia medica may be taken as the theme the same system may be applied. In analyzing the dysentery symptoms, the stool, rectum, anus, abdomen, stomach and mouth, in other words, the symptoms of the whole digestive tract are classified in the first column, and all the symptoms as concomitants in column 3. The dysentery of mercurius is given, more or less complete, from the elementary standpoint of only grand characteristic symptoms, *i. e.*, not only symptoms that have very frequently occurred in the provers, and have very frequently been verified, but using only the most universally accepted of these "key notes." The other remedies are each compared with these only. Omission of symptoms in the comparisons does not signify that they are necessarily absent in the remedy—such characteristic absence would be noted as a part of the picture.

To make the size of this paper acceptable we shall, therefore, compare with mercurius sol. and viv., their nearest analogues and the mucous membrane dysentery remedies.

MERCURIUS DYSEN

REM.	SENSATION. ALTERED FUNCTION. LOCALITY.	CONDITION OR MODALITIES.
MERC S AND MERC. V.	A. Stools: slimy, bloody, green. B. Tenesmus in rectum - - - - - C. "Cannot finish" sensation. D. Burning in anus. E. Prolapsus ani. F. Bad taste, foul breath, salivation. G. Tongue large, flabby and shows imprint of teeth.	H. { < during and after S. { not > by S. I. < night. J. < heat of bed. K. < during perspiration.
MERC. C	A. Stools: chiefly mucus tinged with blood, and scanty. B. Tenesmus very distressing and persistent. C. More than "never-get done" feeling, it is an intense painful tenesmus.	All preparations of Merc. ducing bloody stools with ten
HEP.	A. Stools: may be slimy, bloody, green, but more apt to be clay-colored and sour smelling. B. Passes with great exertion, though soft.	H. I. J. K. Wants the modalities of Merc. Oversensitive, mentally and physically, easily irritated, sensitive to cold air, to pain and to touch. Cause: Abuse of Merc.
NIT. AC.	A. Stools: B. Painful as though something would tear in rectum. Sticking "as from splinters" in anus.	Especially suited to dark-haired people (Merc to light-haired people.) Cause: Abuse of Merc.
PHOS.	A. Stools: Bloody with small white particles, like opaque frog's spawn. B. Involuntary the moment it enters the rectum. E. Anus wide-open constantly.	> cold food and drink. < soon as it gets warm in stomach. < turning on left side. Especially suited to tall, thin sensitive and amative people; or young people who grow too rapidly, stoop and suffer chlorosis and anemia.

TERY COMPARISONS

CONCOMITANTS.	MEMORANDA DIFFERENTIAL HINTS.
L. Constant desire to urinate, but little is passed. **M.** Profuse perspiration that does not relieve. **N.** Offensive sweat. **O.** Chilliness after S. **P.** Weakness after S. **Q.** Trembling. **R.** Rheumatic pains in limbs.	**S.** The more blood, the better indicated. **T.** Sporadic Dysentery rather than malignant. **DIFFERNTIAL HINT:** "Intensity rather than quality of symptoms differentiates this remedy from others. It differs negatively from many other remedies, wanting characteristics they possess."
L. Urine frequent, scanty, hot, bloody, retained or suppressed. act on the intestines, proesmus.	**T.** Severe cases. The most essential feature of Merc. C. is its phagedenic tendency to all inflammatory conditions. **DIFFERENTIAL:** The symptoms of Merc. C. are practically only those of Merc. V. intensified. The tenesmus of bladder and rectum is most characteristic.
L. Weak bladder, symptoms as "dropping vertically," "must wait before u. flows," "never able to finish u." Reminds one of the weakness of rectum.	**T.** Chronic intestinal Catarrh, with inactive rectum more often than Dysentery. The most essential feature of Hep. is its tendency to promote suppuration. **DIFFERENTIAL:** Wants the modalities of Merc.
M. Sweats easily by every slight motion. **L.** Sticking in orifice of urethra. Urine smells like horse urine.	**T.** Sub-acute of Chronic Dysentery—Typhoid type. **DIFFERENTIAL:** Characteristic pains are like splinters sticking into the parts. Nit. Ac. has these severe pains for hours after S., Merc. has the "never-get-done" feeling.
P. Great exhaustion after S. Ulcers at mucous outlets of body where skin and mucous membranes meet. **L.** Hæmaturia. **P.** Great exhaustion and emaciation. Weak, gone feeling, especially in entire abdomen.	**T.** In Chronic cases mostly. Hemmorhagic diathesis "Small wounds bleed much." **DIFFERENTIAL:** Sago-like particles in S. Anus wide-open; involuntary rather than "never-get-done" feeling. The modalities.

PULS.	A. Stools: No two S. alike. F. Bitter taste, four breath, Thirstless. G. Tongue white, covered with tenacious mucus.	< warm room and heat. > open air. I. < evening. Especially suited to women and children, light complexioned, mild, submissive, weep easily. Cause: Fatty foods, ice cream.
SUL.	A. Stools. Like Merc. has great variety; also bloody mucus, especially bloody in streaks. B. Tenesmus, not as violent, but equally persistent. D. Burning, itching, pressing in anus. E. Anal hemorrhoids. F. Hungry and faint 10-11 A. M. Taste pasty, bitter or sour. G. Tongue coated, dry thirst.	I. < night. J. < heat of bed. < early morning. < at rest, especially standing. > during motion, walking.
ACON.	A. Stool: Even pure blood, frequent and small. B. Tenesmus.	Best suited to nervous, sanguine, rheumatic, plethoric people with dark hair and eyes, and rigid fibre, especially if habits sedentary. Cause: Checked perspiration; cold, dry N. W. winds; cold nights and warm days as in autumn; fright.
APIS.	A. Stools: D. Raw sensation in anus. Bruised, soresness of abdomen. Little or no thirst.	
ARG. N.	A. Stools: Green mucus "like chopped spinach," or bloody. B. When any tenesmus - - - - Noisy flatus and noisy eructations. G. Tip of tongue red and painful.	H. > after S. < after eating candy or sugar.

L. Urine frequent and profuse. **O.** Chilliness. **R.** Pains in limbs shift rapidly.	**MEMO:** The woman's remedy. Light complexion. Mild disposition, weep easily. Delayed menses. Symptoms ever changing, and pains ever shifting. < warm room. Thirstlessness. All discharges bland, thick and yellowish green.
L. Burning in urethra. U. frequent and scanty. **M.** Hot flushes, followed by perspiration and faintness. Heat in soles of feet and top of head. **N.** Offensive odor of body despite washing. Averse to washing. **P.** Emaciation and debility, "cat nap" sleep. Red lips and other orifices of body.	**T.** When the appropriate remedy fails to act, in sub-acute and chronic cases. Especially suited after Acon. in acute cases. Also after Merc. fails. "Burning" and heat one of the chief characteristics of Sul. Its chief local action is on the skin, itching and vesicular. Chronic Miasma.—Psora.
L. Urine red and hot; anxious desire. **O.** Chill before fever. **R.** Rheumatic pains in head, neck and shoulders. Mental anxiety; fear of death. Restlessness. Dry heat. Full, hard, quick pulse. Unquenchable thirst.	**T.** In the very beginning of Dysentery. **DIFFERENTIAL.** Tenesmus less continuous. Tongue swollen but does not show imprint of teeth. Sweat relieves all symptoms. Dark complexion (Merc. Light.
Stupor interrupted by occasional piercing shrieks.	**MEMO:** Edema. Pains stinging, burning, sore. Drowsiness. Thristlessness generally. **DIFFERENTIAL:** Low type of fever, without thirst. Bruised soreness of abdominal wall.
L. Burning in urethra. **R.** Tremulous weakness with coldness.	**T.** Chronic Dysentery with ulceration of rectum. **MEMO:** The characteristic splinter-like pains of Nit. ac. are not lost in Arg. n. Profuse muco-purulent discharge. Incoherent ideas, and inco-ordinate movements. **DIFFERENTIAL:** If any tenesmus is >after S.

ARS.	A. Stools: Dark and putrid. B. Tenesmus in rectum. D. Burning in anus. Burning thirst for little water often. Vomiting immediately after eating or drinking.	< after midnight. < after eating or drinking. > heat. < cold.
BAP.	A. Stools: Offensive. B. Tenesmus, generally painless. G. Tongue yellowish-brown with red shining edges.	
BELL.	A. Stools: B. Tenesmus very painful—is more pressing down to anus and genitals, as if everything would press out. G. Tongue deep red and dry. Pain in abdomen as if sore or raw. Tenderness on pressure.	Especially suited for children more than adults. Light hair and blue eyes. Plethoric.
BRY.	A. Stools: More commonly dry and difficult, as in obstinate constipation. F. Taste bitter. Thirst for large quantities at long intervals. G. Tongue dry and mostly white.	<motion. > rest. Especially suitable for the gouty or rheumatic diathesis. Dark complexion, firm fibre, irritable.
CANTH.	A. Stools: White or pale-reddish mucus, like scrapings of intestines. B. Tenesmus.	
CAPS.	A. Stools: Mucus, at times mingled with blood. Small and frequent. B. Tenesmus and burning in rectum. D. Burning in anus. F. Thirst after every stool, and shivering after every drink. Taste foul.	

L. Burning in urethra. Micturition involuntary. U. scanty and burning. **P.** Profound exhaustion. Rapid emaciation. **Q.** Great restlessness. Anxiety and despair.	**MEMO:** Great thirst for little and often. Great restlessness. Great burning, > heat. Great prostration. Rapid emaciation. < after midnight. **DIFFERENTIAL:** Characteristic thirst of Ars. Great restlessness of Ars. Ars. > heat; Merc. < heat. Characteristic tenesmus of Merc.
N. All discharges offensive. **P.** Great prostration. Face dark red with besotted look. Sleepless and restless; feels scattered about the bed and room, and tosses about to get the pieces together.	**T.** Typhoid type, especially in old people. **DIFFERENTIAL:** Painless tenesmus. Tongue and face. Wants the modalities of Merc.
L. Retention of urine, which passes only drop by drop, or Enuresis nocturna. Head hot while hands and feet are cold. Violent throbbing of carotids. Violent delirium. Dilated pupils. Starting during sleep. Sleepy but cannot sleep.	**T.** Dysentery, especially in children. **MEMO:** Great sensitiveness and acuteness of senses. Chilly—as from having hair cut. Pains come and go suddenly. Heat redness and burning. < lying down. Skin scarlet, smooth and shining. < R. side, except > L. side in mouth and fauces.
L. Urine red, almost brown. Mucous membranes all dry.	**T.** After Acon., in Summer, after taking cold drinks. **MEMO:** Stitching, tearing pains. < motion, and > rest. Bilious, irritable and inclined to anger. Thirst large quantities, long intervals. Disinclination to make any effort. **DIFFERENTIAL:** Dark complexion (Merc. light.) Modalities.
L. Burning, cutting in urethra. Tenesmus of bladder, constant urging, painful, in drops, or blood. **P.** Tendency to collapse.	**T.** Bad cases epidemic form. **DIFFERENTIAL:** Stools like scrapings of intestines. Urinary symptoms more intense than in Merc.
L. Burning and tenesmus of bladder. **R.** Drawing pains in back.	**T.** Dysentery in moist weather. **MEMO:** Burning and smarting as from red pepper. **DIFFERENTIAL:** Shivering when patient drinks. Drawing pains in back. (Merc. pains are bruised.)

CARB V.	A. Stools: Putrid, cadaverous odor. Flatus offensive. Abdomen greatly distended.	Especially suited to old people; children after exhausting diseases; "a venous constitution;" tendency to hemorrhage in low types of disease.
COLO.	A. Stools: Colic, griping below navel, obliging him to bend over.	H. > S. < eating or drinking. > bending over. > hard pressure. Cause: Anger with indignation.
DULC.	A. Stools: Colic as after taking cold, and as if diarrhea would occur.	< wet, cold. Especially suited to catarrhal and rheumatic diathesis, and irritable disposition. Cause: Damp cold weather; abuse of Merc.
FER. P.	A. Stools: Bloody. B. Absence of tenesmus.	Especially suited to pale, anæmic people, but subject to sudden violent congestion and inflammation like the plethoric Acon.
IPEC.	A. Stools: Green mucous "as green as grass." Bloody, slimy, or almost black, and fermented like frothy molasses. F. Constant nausea; salivation; vomiting. Violent colic. G. Tongue usually clean.	
KALI BI.	A. Stools: Brown frothy water, or jelly-like and bloody. F. Lost appetite, vomiting, burning pains at pit of stomach. G. Tongue dry, red, smooth and cracked.	< morning Especially suited to fat, fair sluggish people—children. Cause: Periodical every year as in spring.

Desire to be constantly fanned. Cold extremities, especially knees. Tendency to collapse.	**T.** Very severe cases, or later stages of Dysentery. **MEMO:** Flatulence. Offensive discharges. Putridity and burning. Weakness. Coldness. Lividity.
L. Frequent urging to urinate. **R.** Inclination to painful cramps in all parts.	**S.** The nervous elements predominate over the inflammatory symptoms. **MEMO:** Colic. Neuralgia in various parts of the body. **DIFFERENTIAL:** The characteristic griping colic > after S. Tenesmus > after S.
	DIFFERENTIAL: Dulc. and Merc. symptoms very much alike, but the Merc. symptoms are more intense, and the Dulc. aggravation more marked. Good for the abuse of Merc.
Fever.	**T.** First Stage of Dysentary. **MEMO:** It stands between Acon. and Gels. in fevers. Hemorrhages bright from any orifice. Acute articular rheumatism. **DIFFERENTIAL:** No Tenesmus.
	T. Seldom suited to long continued cases. **MEMO:** Constant nausea. Hemorrhages bright red from all the orifices of body. **DIFFERENTIAL:** The peculiar S. Constant nausea. Vomiting. Clean tongue.
	T. Sub-acute rather than acute. **MEMO:** The secretions become tough, stringy and adhesive; finally hardening into plugs or membranes. Ulcers that tend to perforate. Pains in small spots, and migrate quickly. Hoarseness and cough. Fair, fat, and sluggish people, especially children. **DIFFERENTIAL:** Gelatinous S. Tongue. < morning.

LYC.	**A.** Stools: (Hard, dry, as in constipation is more characteristic.) **F.** A little food causes fullness and distention of abdomen. Excessive flatulency.	< 4-8 P. M.
MAG. C.	**A.** Stools: Bloody mucus with green frothy scum like that of a frog pond. Desire for meat.	More for women and children.
NUX. V.	**A.** Stools: Bloody mucus. (More commonly constipated.) **B.** Tenesmas - - - - - - - - - **O.** Frequent ineffectual desire, passing but small quantities at each attempt. **D.** Burning in anus, but most especially with blind Hemorrhoids. **E.** No prolapsus ani. **F.** Bad taste in mouth in morning. Aversion to food; nausea and vomiting. Flatulent colic (more common in constipation.)	<morning. **H.** > for short time after S. Especially suited to persons of sedentary habits, ill-humored, and usually constipated; oversensitive mentally and physically. Cause: Drug mixtures, alcohol, highly-seasoned foods, coffee, tobacco.
RHUS. T.	**A.** Stools: Bloody water, like washings of beef. **F.** Craving for cold milk. **G.** Triangular red tip on dry and cracked tongue.	Especially suited to rheumatic diathesis. Cause: Getting wet while overheated; strains.
VERAT.	**A.** Stools: Watery and profuse. **F.** Desire for fruits and acids. Violent thirst for large quantities of very cold drinks and acid drinks. Violent vomiting. Severe colic. - - - - - - -	**H.** > after S.

	T. Chronic Dysentery. **MEMO:** < 4-8 P. M. Direction, right to left. Heavy red sediment in urine.
Sensitiveness, mental and physical, leading to neuralgia mental shocks, touch, cold air, etc.	**MEMO:** Children—pale, sickly, with colic and green stools. Sour taste and sour smell of eructations, vomit, stool, perspiration and whole body. Women; Toothache of pregnancy, < night and >cold drinks Menses black, and flow only at night. **DIFFERENTIAL:** Does not have "sweat without relief," nor mouth symptoms of Merc. (Its toothache is also like Merc but > motion.)
L. Burning during micturition. U. frequent, difficult, even ineffectual. **O.** Dry heat, with red face, and averse to uncovering. **R.** Backache.	**T.** Nux must not be overlooked in Dysentery because more frequently used in constipation. **DIFFERENTIAL:** Pains > short time after S.
R. Tearing pains down the thighs.	**T.** Mostly in late stages of Dysentery with typhoid symptoms. **MEMO:** < rest, and > motion. < damp weather and cold. Great restlessness. **DIFFERENTIAL:** Craving for cold milk. Laborious dreams of excessive bodily exercise.
N. Cold sweat on forehead. Collapse. **R.** Violent cramps of the extremities. Contracted pupils.	**T.** Rarely of use in Dysentery, but especially so if choleraic symptoms preponderate. **MEMO:** Copious stools, vomit and sweat. Cold sweat. Coldness and blueness of the surface of the body. Great thirst. Excessive weakness. **DIFFERENTIAL:** No tenesmus. Copiousness of the discharges. Coldness and blueness of the entire body.

DISCUSSION.

DR. H. M. BUNTING: I feel Dr. Seibert should receive the thanks of the society for this succinct method of presenting the differentiation of the remedies. I think it is a very good point to have it printed in the transactions, so that every member of the society shall have them. It is a big time-saver in the matter of reference, arranged as he has arranged them. I move you sir, that a vote of thanks be taken to Dr. Seibert. (Carried.)

DR. O. S. HAINES: I have had the opportunity of listening to Dr. Seibert several times before; and every time I hear him talk about materia medica I like him better, if that is possible.

This scheme of his for presenting the comparisons, shows at a glance to any one who has studied the materia medica, the advantage of the system; and when we get home and are able to read it at leisure, the amount of work and the length of time that it took the Doctor to get this up will gradually dawn upon us. It is very apparent to me that he has spent many nights over this; but it just goes to show the advantage of studying the materia medica, or the remedies, according to a definite system, before you reach the bedside. The kind of study of medicines which you do at the bedside is valuable, in a certain sense; but is not valuable as an educational feature compared with the study of the different remedies according to a system already established, and as easy for yourself, in your studies before you go to the bedside.

DR. W. A. SEIBERT: This method of study entails much work, but it eventuates in results. This particular work has been done gradually and I have done it with a good many remedies. I say remedies advisedly rather than diseases. I would take a symptom of some remedy, making it almost a repertory study, but this is not a repertory study. Taking one symptom in particular, or a little group of symptoms makes it very simple compared with this complicated subject. Take rheumatism when you go home, and work it out; you will all come to the same conclusion—another thing that goes to help to prove that our materia medica has a scientific basis. You will come to the same conclusion with your papers when you work them out; and I had hoped that I would hear the objection (although I believe it is one that can easily be

made,) when you develop a subject as you look at it here that there is too much work in it. You know the old keynote, that we are having a faith; and that we are sure we are having a faith was sounded yesterday very well by Dr. McClelland, when he said that, much more than the faith, we needed work; and it is work that is necessary to be put upon our materia medica.

Learn your materia medica and you will cure your cases; and the work that is done on materia medica is not lost; and another thing I want to say is, that the important, great work, and that I do not see referred to very much, is the search for the authority for the symptoms. As I go through a great many books in compiling a thing like this, I find the symptoms are garbled, are unauthentic even in their entirety; and I believe they should all be authenticated and the work of a society; a group of men that will get together and give us an authenticated materia medica—it will be slow work, but a thing that homœopathy needs even more than any reproving, valuable as that is.

DR. T. H. CARMICHAEL: I may say, in closing, that it does seem to me that this little experiment has proven a success of confining the work of our section to one small part of the body; and I think we have seen how this one part can be profitably discussed through several sessions of our society. At all events it seems to me that our attention has been focussed on one line of thought, rather than diverted by taking up isolated remedies without any bearing one upon the other.

I hope that something like this may be reported at some future time in the history of the society. This closes our bureau.

REPORT OF THE SECTION OF PATHOLOGY AND PATHOLOGICAL ANATOMY.

Recent Advances in Medical Pathology, by S. W. Sappington, M. D.

The Pathologic Physiology of Diabetes, by J. E. Belville, M. D.

Recent Advances in Gynæcologic Pathology, by Norman S. Betts, M. D.

Some Recent Advances in Surgical Pathology, by J. D. Elliott, M. D.

Recent Advances in Neurology and Psycho-Pathology, by Charles D. Fox, M. D.

RECENT ADVANCES IN THE MEDICAL PATHOLOGY.

S. W. SAPPINGTON, M. D., PHILADELPHIA.

In the field of medical pathology we have selected for discussion the following subjects: Anaphylaxis, the tuberculin reaction, the serum diagnosis of syphilis, opsonins and vaccines. We also remark very briefly on the serum treatment of meningitis and blood cultures in typhoid fever.

ANAPHYLAXIS.

Anaphylaxis is a specific, congenital or acquired condition of hypersusceptibility or supersensitiveness of the organism to foreign substances. Its extensive study has been the special merit of Drs. Rosenau and Anderson. (1) The importance of the matter lies in its relation to immunity, its possible explanation of the period of incubation of certain infections, its relation to the toxemias of pregnancy and its connection with the accidents of serum therapy. One of its best demonstrations as a factor in infectious diseases is found in tuberculosis.

Most of the studies on anaphylaxis have been made experimentally on guinea pigs, and the condition may be induced in them, as in other animals, by the introduction of any strange protein, examples common by usage being horse serum, egg-white or milk.

Horse serum has been especially studied on account of its connection with serum therapy.

If a guinea pig be injected with a small amount of a certain protein, say 1-250 of a cubic centimeter of horse serum or 1-1,000,000 of a gram of pure egg albumin, and, after a proper interval, 7 to 12 days, be subjected to a second injection of the corresponding protein, as low as 1-10 of a cubic centimeter of horse serum or 1-2,000 of a gram of pure egg-white, the animal is so sensitized to this protein by the first injection that the introduction of a second dose, while in its state of hypersusceptibility of anaphylaxis, results promptly in marked symptoms of illness and usually death.

The cause, pathologic anatomy and physiology and various details of this phenomenon have been the subjects of painstaking research, but with, as yet, little reward in the shape of definite information on basic points. We will not attempt to go into a review of them here except to state that the toxic principle has not been isolated; that while Anderson and Rosenau suggest that the poison acts on the respiratory center, Auer and Lewis (2) later state that the animals die from asphyxia, due to peripheral causes; and that pigs may be sensitized by feeding them uncooked horse meat, cooking preventing sensitization. This last may be explanatory of poisonings in man after eating fish, sea food or other articles of diet.

Anaphylaxis and immunity are very closely related. One may depend upon the other. An animal may be in a state of hypersusceptibility and immunity at the same time. Rosenau and Anderson say "we believe the problem of hypersusceptibility has an important bearing upon the question of immunity and hence we expressed the opinion that resistance to disease may be largely gained through a process of hypersusceptibility. Whether this increased susceptibility is an essential element or only one stage in the process of resistance to disease, must now engage our attention. We cannot escape the conviction that this phenomenon of hypersusceptibility has an important bearing on the prevention and cure of certain infectious processes. Our work upon the hypersusceptibility produced by the bacterial proteins strengthens this belief, for our recent results prove that the phenomena of hypersusceptibility to certain protein substances extracted from the bacterial cell is fol-

lowed by a definite immunity against infection by the micro-organism. It has been shown that guinea pigs may be sensitized by injection of bacterial proteins; a second injection after a definite interval produces characteristic symptoms like those from horse serum; following this, the animal is immune to the corresponding infection. These results suggest the practical significance of anaphylaxis in the prevention and cure of certain infectious diseases.

The phenomenon of hypersusceptibility is also said to very probably explain the period of incubation in some infectious diseases. "Is it a coincidence that the period of incubation of a number of infectious diseases is about ten to fourteen days, which corresponds significantly with the time required to sensitize animals with a strange protein?" In this group of affections, the body may be sensitized by the foreign protein slowly dissolving out of the infecting organism, thus requiring a certain time before the poisonous effects are evident. This not only explains the "period of incubation," but the constancy of that period. In pneumonia with its short incubation, the crisis about the tenth day may be similarly explained.

It has been proven that the specific hypersusceptibility may be transmitted from the mother guinea pig to the young, and it is suggested that this may throw light on the so-called inherited tendency to tuberculosis. This is strengthened by analogies in the action of tuberculosis and horse serum, both producing hypersensitiveness and a certain amount of immunity. If anaphylaxis to horse serum may be transmitted from mother to young, may not a hypersusceptibility or tendency to the disease be thus transmitted and explain the common occurrence of tuberculosis "running in families?"

It may be that the problem of puerperal eclampsia is solved by anaphylaxis. This phase of the question is discussed by Dr. Betts.

The relation of anaphylaxis to the accidents of serum therapy is now well established. Very rarely, death has immediately followed the injection of diphtheria anti-toxin. It has been proven that the diphtheria antitoxin has no relation whatever to this accident. The poison in such cases rests in the horse serum itself; its action is rendered possible by the susceptibility of the individual. Such a subject is in a state of anaphylaxis to horse serum. Many

of these cases were asthmatics, which is noteworthy, considering the effects on respiration of a second dose of serum in pigs. It may be that in such instances the needle of the syringe has penetrated a blood vessel, a large amount of foreign protein thus suddenly entering the circulation. The serum itself in such cases is not especially toxic to pigs. How the individual becomes thus sensitized is still an open question.

Rosenau and Anderson remark on the strong connection between body defense and protein metabolism and refer to the fact that Ehrlich's and Metchnikoff's theories both involve this form of metabolism. Anaphylaxis is also evidently intimately bound up with protein metabolism, and the authors say, "it cannot but excite our wonder that the chemistry of the body should be so delicately balanced that the introduction of 1-10,000,000 of a gram of foreign protein should be able so profoundly to influence it as to result in serious symptoms when injected a second time."

THE TUBERCULIN REACTION.

A beautiful, practical demonstration of anaphylaxis is seen in the tuberculin reaction. If an individual become infected locally with tuberculosis, the tissues generally become anaphylactic or hypersensitive to the tubercle bacillus or its products, presumably as a part of the immunity process. On this depend the various tuberculin reactions. The process is protective. Tuberculous areas are thus limited and walled off by the hypersusceptible surrounding tissues. The tissues are generally on the alert to repel any further advances or invasions of the disease. This reaction had been taken advantage of in the general response to the subcutaneous injection of tuberculin, but the much simpler and safer methods of local reaction as evidence of the hypersusceptibility of the tuberculous subject have to a great extent displaced the former.

We do not propose to go into a discussion of the technic or relative values of the ocular, cutaneous and subcutaneous uses of tuberculin in diagnosis and prognosis. We believe these methods will prove of almost inestimable value in the study of tuberculosis, and with the recent careful work of Von Pirquet, Calmette, Wolff-Eisner, Baldwin and Hamman, and, further, the tendency to estimate the quantitive as well as the qualitative factor in the intro-

duction of tuberculin, we may expect much contributed to diagnostic, prognostic and therapeutic fields in tuberculosis. The two following are examples of such contributions.

Von Pirquet (3) suggests for international statistical study annual applications of his cutaneous test to discover at what age children usually acquire tuberculous infection. This would show at just what age they are most susceptible and enable us to institute proper hygienic and prophylactic measures at or before the time of greatest danger.

In the normal state, there is no reaction to tuberculin. In tuberculosis there are varying degrees of reaction except in the advanced and final stages when reaction fails to occur. The difference between the healthy individual and the subject in the last stage of tuberculosis is that the healthy man has not had his anaphylactic powers developed, while the tuberculous individual has had them developed and exhausted. Tuberculous patients whose specific hypersusceptibility to tubercular poisons is broken down are capable of presenting little or no resistance to the advance of the disease. Rosenau and Anderson say that the practical lesson of this is as tuberculin in large and too frequently repeated doses exhausts this very useful and beneficial state of hypersusceptibility, it should only be used in such a way as to develop and not diminish the power of anaphylaxis of the tissues.

THE SERUM DIAGNOSIS OF SYPHILIS.

This is a test-tube serum reaction depending upon the binding or fixation of complement. The test is based upon Ehrlich's well known theory of immunity and requires an understanding of the principles of that theory. It occurs from the fact that there are certain substances present in the blood and serum of syphilitics, not contained in non-syphilitics, which will unite with the extracts of luetic and normal organs and with certain lipoids and so anchor complement. Now, when the non-specific complement, a very necessary factor in certain forms of immunity, is bound, it cannot form chemic combinations with other substances. Hence the binding of complement is proven or disproven by following with a test for hemolysis, the presence or absence of hemolysis indicating the absence or presence of syphilis. This test was first described by

Wasserman, Neisser and Bruck (4) and is commonly known as the Wasserman reaction. Its great drawback has been the amount of technic and equipment required, making it impractical outside of well fitted laboratories. Many diligent workers are now trying to secure a simplification of the method, the most likely one so far being the modification of Noguchi. (5.)

The advantages of the test are obvious. Statistics are now available from thousands of cases and there is no reasonable doubt, even with those at first skeptical, of the great value of this reaction as a means of diagnosis. A recent conservative estimate gives 40 to 60 per cent. of positive reactions in the first stage, 70 to 90 per cent. in the secondary stage, and 50 to 90 per cent in the tertiary stage. In cases of tabes and general paresis the serum or spinal fluid gives a positive reaction in 60 to 80 per cent. of subjects. The immense importance of this test in questions of marriage, offspring, wet nurses and latent cases can be appreciated. The results of the reaction have removed tabes and paresis from the class of parasyphilitic diseases and grouped them positively with those of luetic origin in which an active agent is still at work. Dr. Fox discusses this portion of the subject more fully.

The fact that the reaction becomes negative under a sufficient number of courses of mercurial treatment has led to much investigation as to whether the test will be an indicator of the prognosis and success of the treatment and a guide as to when to begin or stop treatment. There has been considerable controversy on this subject, but a recent communication from Neisser's clinic and contributions from observers in this country suggest that it will be of much value in all these respects, thereby enhancing its value still more.

Furthermore, disease which we think of as remotely or possibly syphilitic, we may now have reason to connect directly with leutic infection. Collins and Sachs (6,) in a very practical paper on the value of the Wasserman reaction in cardiac and vascular disease, point out the large percentage of positive reactions in aortic disease, especially as contrasted with mitral affections; and the equally frequent or greater occurence in aneurysms. They give some very striking examples of its value in the diagnosis of such diseases and show that using it as an indicator for active anti-luetic treatment

with mercury instead of the usual potassium iodide, they obtained very satisfactory therapeutic results.

OPSONINS AND VACCINE THERAPY.

The present status of this subject is one difficult to estimate. Some confusion is entailed by the almost invariable association of opsonins and the opsonic index with vaccine treatment. Opsonins have no more essential connection with vaccines than they have with any other method of treatment. Opsonins are substances present in the blood serum and other fluids of the body in small quantities normally; increasing greatly and specifically with the development of immunity to various infections; and decreasing specifically with lack of immunity. Wright devised a method for measuring the amount of opsonins present, termed this the opsonic index and used it as a guide for his treatment by the administration of bacterial vaccines. But we may, if we choose, use it just as well as a guide for any other method of treatment. And, on the other hand, we may employ vaccine treatment without the opsonic index as a guide, using clinical data, such as temperature, pulse, leucocyte count, or other immune bodies such as agglutinins or bacteriolysins as indicators.

That opsonins are important factors in immunity is well established. Whether they can be accurately measured by Wright's method and whether the method is practical is still debatable. We believe the method is fairly accurate in the hands of a good technician; quite as much or more so than many other clinical and physical diagnostic methods in vogue. It is practical in some cases. In others it is a question whether the amount of time expended in the estimation will be repaid by the information furnished. It is good to know that experts in opsonic work are carefully comparing indices and clinical data and furnishing us with clinical signs which may be taken as equivalents of rises and falls in the opsonic index. It is evident that the estimation of the opsonic index, like many other valuable medical methods, for example the Widal reaction, requires a certain amount of time and technic. It is equally certain that it furnishes some very good diagnostic and therapeutic indications.

Vaccines have followed the usual course of new things. At first,

they were decidedly over-rated; the tendency now is to under-rate them. And finally they will seek their normal level. That they are valuable additions to therapeutics, hardly any well informed physician doubts. Two facts concerning them are noteworthy: that, at present, they are more useful in certain infections than any other method of treatment, and that they save lives in diseases which were formerly under similar circumstances fatal. In some instances, they have been disappointing, notably in streptococcic infections. A number of observers also report poor results in colon infection. But very good reports have followed their use in tuberculosis, staphylococcic, gonococcic and typhoid infections. Some remarkable cures have been achieved in streptococcic and colon infections. Such excellent observers as Hale, White and Eyre (7) report a very successful series of cases due to the gonococcus and colon bacillus. Gilman Thompson (8) records a number of cases of septic endocarditis which recovered following the use of vaccines. Preference seems to be given to autogenous vaccines.

Our judgment in this matter is better suspended until we are fully informed. Vaccines are not cure-alls as every lazy physician expects every new remedy to be. It will be well to recall the introduction of diphtheria antitoxin and the mad rush to provide antisera for almost every infection. At present we know that outside of diphtheria, tetanus and meningitis, they are of little or no value. The same may be true of vaccines, and, in a few years, we shall probably have clear cut indications for their use in a limited number of diseases, and we may expect, we think, most satisfactory results in these cases.

ANTI-MENINGITIS SERUM.

A word as to the serum treatment of meningitis. Flexner (9) states statistics are now available showing conclusively that the treatment has "shortened the course, diminished complications and reduced the mortality" of this frightful disease. The serum is injected intraspinally and some observers inquire whether it is not the protein bodies present that are active in the successful results rather than any specific property of the serum itself. At any rate, the results are extremely encouraging.

BLOOD CULTURES IN TYPHOID.

The ease with which positive blood cultures are obtained in typhoid fever deserves mention. A small amount of blood, 1 or 2 c. c., or even a blood clot, planted in ox-bile, will result in a typhoid growth in a goodly percentage of such infections, and allow a very early diagnosis and corresponding early treatment and care of the case.

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THE PATHOLOGIC PHYSIOLOGY OF DIABETES.

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Diabetes being in the final analysis a faulty metabolism of the carbohydrates, it is essential for a proper understanding of our subject that we should have clearly in mind the natural history of these foodstuffs in the human body.

It will not be necessary, however, to fatigue you with a detailed statement of the elementary facts regarding the carbohydrates, viz., their various forms, digestion and function; but simply to recall that the form in which the carbohydrates are absorbed is that of dextrose and levulose, occurring in the blood as dextrose. Absorption, under ordinary diet, takes place through the blood vessels of the intestines, hence the sugar content of the blood coming from

the intestinal tract is passed through the liver before reaching the systemic circulation. When the concentration of the sugar solution rises above a certain percentage, absorption also takes place through the lacteals, and, as a consequence, sugar so absorbed passes directly into the general circulation by way of the thoracic duct and produces an alimentary glycosuria. The amount of sugar which can be fed without production of glycosuria is termed the assimilation limit, varying in different animals. As determined by Pfluger in dogs it amounts to 11g. per kilo of body weight.

The percentage of dextrose in the blood is comparatively constant and comparatively low—from .1 to .15 per cent. That this low and constant level is maintained is due to the fact that the sugar, both dextrose and levulose, carried by the portal vein to the liver is there stored up by the activity of the liver cells in the form of glycogen or animal starch. The liver, however, is not the only depository for glycogen, the muscular tissue throughout the body containing a considerable amount, a fact of considerable interest as it has been shown experimentally that dextrose is the most efficient food for the development of muscular energy. The reconversion of glycogen into dextrose takes place through the action of a ferment present both in the liver and in muscle.

The mechanism by which the output of glycogen from the liver is regulated for the maintainance of the sugar content of the blood, thus adapting it to the varying needs of the body, is at present generally admitted to be under the control of the nervous system. A sugar center exists in the medulla, excitation of which causes a more rapid output of sugar from the liver. The Bernard puncture of the floor of the fourth ventricle, the zucker stich, as the Germans call it, being a classic experiment frequently repeated and confirmed by later experimentors. More recent work along these lines has shown, however, that this glycosuria results indirectly through stimulation of the adrenal glands. Mayer, taking two groups of guinea pigs, in the first series made punctures of the fourth ventricle with a resulting glycosuria. In the second he first removed the adrenals, when he found that puncture of the fourth ventricle was without result, demonstrating that the integrity of the adrenals is essential to the development of glycosuria. The dependence of glycosuria after sugar puncture upon the activity

of the adrenals was also demonstrated by Waterman and Smith, who found, on examination of the blood of animals after sugar puncture, a marked increase of the adrenalin content of the blood.

A slight digression at this point to consider some of the results of work done by these authors and confirmed by others might be of interest. An internal secretion has not only been definitely proved for these organs by demonstrating its presence in the blood of the adrenal veins, but the amount of the secretion has been determined with a fair degree of accuracy by Ehrman and, later, by Waterman and Smith. The latter rectifying an error in the technique of the former experimentor, placed the amount of the adrenalin in the caval blood at five ten-millionths of a gram per c. c. It would be of interest, if time permitted, to give in detail the methods by which these results have been obtained.

It is not only, however, through sugar puncture, *i. e.*, direct stimulation of the medullary sugar center that glycosuria may be produced. As with other centers in this locality, this center may be reflexly excited.

Bernard and Eckhardt have both shown that irritation of the central end of the cut vagus causes glycosuria; this nerve, therefore, carries centripetal fibres to the sugar center. The same experimentors demonstrated that this stimulation was negative, providing the splanchnic nerves were first sectioned.

Bernard later produced a glycosuria by stimulation of the splanchnics. This conclusion, therefore, is obvious, that these nerves carry centrifugal fibres. The facts above stated, collectively considered, demonstrating a nervous mechanism regulating through its centre in the medulla and its centripetal and centrifugal pathways the sugar output from the liver. The significance of the part played by the adrenals in the production of glycosuria lies in the fact that adrenalin has been proved to have a selective action upon true sympathetic nerve fibres, as demonstrated by its causing dilatation of the pupils. The sphincter muscle of the iris is, as you well know, supplied by fibres which anatomically and histologically are identical with the sympathetic fibres, and yet are demonstrated by the action of adrenalin not to be considered as in fact belonging to the true sympathetic system. As the secretion of adrenalin has been shown to be notably increased by stimulation of the sympa-

thetic, we have here again, as pointed out by Waterman and Smith, another of those vicious circles so frequently met with in the body. Further, Blum has shown that injection of adrenalin causes the appearance of sugar in the urine. All these results seem to point to increased secretion of adrenalin as the cause of the increased output of sugar from the liver; as, therefore, one of the factors in the production of diabetes.

The discovery by Minkowski and Von Mering, in 1889, that removal of the pancreas caused glycosuria brought about the general belief that the ultimate cause of diabetes was to be looked for in a deficiency of the internal secretion of this organ, this secretion being generally conceded to be the product of the activity of the cells of the islands of Langerhans. The function of this secretion being to aid in the oxidation of sugar. Deficient oxidation resulting in an accumulation of sugar in the blood and its consequent elimination as sugar through the kidneys. The views just stated are still maintained; but, taken in connection with the foregoing conclusions, seem to demonstrate an antagonism existing between the adrenals on the one side and the pancreas on the other. The former causing an increased production, the latter a more rapid oxidation of sugar.

Zuelzer has demonstrated the existence of a parallelism between the increase in the amount of sugar from the liver in animals from whom the pancreas has been removed and those in which adrenalin has been injected. That is to say, that the sugar content of the blood is, within limits, the same in animals from which the pancreas has been removed and those in which adrenalin has been injected. He, therefore, very reasonably supposes that under normal conditions there is a balance between the two, so that the sugar driving influence of the adrenals is counter-balanced by the sugar destroying influence of the pancreatic ferment. The reasonableness of this assumption was still further demonstrated by him when he showed that simultaneous injection of adrenalin and pancreas extract did not produce glycosuria, and still further, that addition of pancreas extract to adrenalin destroyed its activity; also that the glycosuria caused by extirpation of the pancreas disappeared when the adrenal veins were ligated, upon which Waterman remarks that the Minkowski diabetes, *i. e.*, that caused by removal of the pancreas is

a negative pancreas and a positive adrenal diabetes. The pancreas being admittedly so important a factor in the production of diabetes, the influence under which excitation of its secretion, both external and internal, takes place becomes of interest to us in considering the question under discussion.

Pawlow reached the conclusion from numerous carefully conducted experiments that the secretion of pancreatic juice was dependent upon nervous influence, the secretory nerve to the pancreas being the vagus, and apparently demonstrating an adaptive action dependent upon the nature of the food.

Starling and Bayliss oppose this view, claiming that the pancreatic secretion depended upon the action of HCl. upon a substance in the mucous membrane of the duodenum, called pro secretion converting it into secretion which absorbed into the blood caused excitation of the pancreatic secretion. Intra-venous injection of secretion caused lowering of the blood pressure and increased secretion of pancreatic juice. They also showed that injection of HCl. into other portions of the intestinal tract, notably the lower part of the small and the large intestine, had no effect upon pancreatic secretion. In order to demonstrate that the increased secretion was not due to a reflex effect they first sectioned the nerves coming from the duodenum and subsequently injected thirty-six per cent. of HCl. with a resulting increase of the flow of pancreatic juice. This, they claimed, to be an experimentum crucis.

Later, Popielski, reviewing the work of these authors, found that secretion was obtainable not only from the mucous membrane of the duodenum, but from that of the large intestine and rectum. Also, that it was formed by the action of dilute HCl. not only on mucous membrane, but the muscular wall of the intestine as well, in fact, that secretion, so-called, was pretty generally distributed throughout the body. In regard to the experimentum crucis of Starling and Bayliss, he showed first, that, from the fact that nerve fibres run frequently in a longitudinal direction in the intestinal wall, the nervous connections between the duodenum and pancreas were not completely divided, and, second, that the anaesthetic used accounted for the increased flow of pancreatic juice, his (Popielski's) experiment showing that ether is a very active excitant of

the pancreatic secretion was due to changes it produced in the blood, viz., a lowering of its coagulability.

Popielski showed further that Pawlow was in error in his conclusion that the vagus is the secreting nerve of the pancreas as secretion followed, even after section of both vagi; he also showed that the idea of adaptation of the secretion to the food taken was erroneous. Thus the secretion of pancreatic juice following injection of fats into the duodenum did not depend upon the fats, but upon the fact that nearly all commercial oils such as those used contained a considerable percentage of acids and it was to these acids the increased secretion was due, neutral fats not having the property. His, Popielski's, conclusions seem, therefore, well founded, that the glandular activity of the pancreas is reflex, being aroused by stimulation of end organs of secretory nerves in the mucous membrane of the duodenum and a considerable part of the small intestine. This reflex is caused through ganglia in the pancreas itself, in the neighborhood of the pylorus, at the level of the upper edge of the gastro-duodeno-hepatic ligament, where a rich accumulation of nerve cells can be demonstrated.

The dependence of the external secretion of the pancreas upon nervous influence being established, naturally the question arises as to the dependence of its internal secretion upon the same influence. Pfluger demonstrated that total extirpation of the duodenum in frogs produced as severe a glycosuria as did the removal of the pancreas itself.

Enrico Rienzi and Enrico Reale reported persistent glycosuria in dogs following resection of the duodenum and while these results have not been entirely substantiated, confirmatory evidence has not been wanting as to the accuracy of their work. Gaultier reports persistent glycosuria following destruction of the duodenal mucous membrane by the use of caustics.

Hertlitzka reports a series of experiments upon frogs in which glycosuria followed injection of nicotine into the duodenum.

Pfluger deduces as a corollary from the facts stated that there exists in the duodenum a central organ having control of the glycolytic function of the pancreas.

The subject of the etiology of diabetes being so closely interwoven with its pathologic physiology, it has been impossible to

separate them in the discussion. I have merely attempted to present the facts so far determined. Conclusions definite in character, in the present state of our knowledge, cannot be drawn, though the facts are suggestive.

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RECENT ADVANCES IN GYNÆCOLOGIC PATHOLOGY.

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The modern tendency to specialism has affected the great field of general pathology as it has affected every other branch of medicine. Today the pathology of the female genitalia is becoming, if not a specialty, a field of investigation for a distinct and independent body of workers. But a few years ago courses in gynæcological pathology were unheard of in our medical colleges; at present practically all first class institutions give special instruction in this branch.

The histology of the female genitalia especially in the case of the uterus and ovary is in some respects unique. Types of cells and cellular changes are seen here which are not found in any other part of the body. As the result of pregnancy tissues are

developed which would be unrecognizable to the student untrained in human microscopic embryology.

While many questions are still unsettled and much remains for the investigator in this field the result of the research of the last few years has been a considerable advance in our knowledge of the local effects of pelvic disease.

Valuable results have been obtained by scores of workers in the investigation of the morbid changes of the endometrium and body of the uterus, the etiology and pathology of various types of metrorrhagia, the pathology of uterine infections and of pregnancy and along many other lines. While the specific cause of cancer remains unknown the exhaustive research to this end, notably by the Cancer Research Commission in England, has been far from fruitless. It is not possible here to enter into the discussion of the numerous theories which have been recently advanced as to the cause of carcinoma, though the subject is an exceedingly interesting one.

Sir Victor Bonney and McConnell in studying the pathology of cancer have described a precancerous stage in which as a result of chronic inflammation the elastic tissue immediately beneath the epithelium degenerates and disappears previous to malignant proliferation. At the same time the sub-epithelial connective tissue shows more or less rarefaction due to the disappearance of collagen and elastin. New lymph nodes are formed with germ centers similar to those seen in the neighborhood of a carcinoma while the connective tissue interstices are filled with plasma cells, polymorphonuclear leucocytes and lymphocytes, the latter intercolating themselves between the deeper epithelial cells until the boundary between epithelial and connective tissue may become indistinct. Bonney, in studying a large series of cases, failed to find a single instance of cancer of the vulva in which the "chronic inflammatory condition known as leukoplakia was not antecedent to the onset of the new growth. * * * * The earliest down growth of the epithelium is into a tissue deficient in yellow elastic fibres and otherwise profoundly altered by the pre-existent inflammatory process." In speaking of cancer of the cervix he says "evidence of pre-existent cervicitis and 'cervical erosion' is present in all the early cases which I have examined. Carcinoma of the

cervix may begin either in the thickened squamous epithelium that covers the area of an old erosion or in the hypertrophied cervical glands higher up. In either case the development of malignancy appears to bear some relation to the altered conditions which obtain between the epithelium and its underlying connective tissue as the result of long continued cervicitis." These findings agree with the picture of beginning cancer and are instructive from the standpoint of prophylaxis and treatment.

In concluding his interesting and scholarly lecture he summarizes as follows: "The onset of the ordinary forms of carcinoma is always preceded by a condition characterized by epithelial hypertrophy and certain constant changes in the sub-epithelial tissue. This precarcinomatous state may be attained through various inflammatory processes, at first quite distinct from one another, but culminating in the same histological picture. The tissue cell proliferation occuring around a primary carcinoma is a part of the precarcinomatous process and materially assists the progress of the growth. There is no histological evidence of a protective reaction on the part of the tissues to the carcinoma cell. Though changes in the adjoining connective tissue bear some very close relation to the cause of epithelial ingrowth, yet malignancy having been established, the further spread of the tumour is independent of such assistance."

Dr. Sappington in his paper before this bureau has discussed anaphylaxis or the heightened susceptibility of the organism to certain foreign substances. Anderson and Rosenau in a recent lecture before the Harvey society, have advanced an interesting theory for the cause of eclampsia and the toxemias of pregnancy along this line.

It occurred to them "that either the blood or protein substance in solution from the fetus or the placenta may first sensitize the mother. A subsequent introduction into the system of the mother of a similar substance may explain the convulsions and the symptoms which occur in a certain class of the toxemias of pregnancy." Animal experimentation seemed to indicate that the sensitizing substance did not come from the fetus, which is in harmony with the generally accepted view and with the facts that eclampsia may occur in cases of hydatidiform mole and where the fetus had pre-

viously been expelled from the uterus. They were able, however, to sensitize guinea pigs with the autolytic products of their own placentas. Further studies along this line are being made.

I am glad to add my share to the plea which is everywhere being made by workers in gynæcological pathology for a reform in the use of the term endometritis, acute and chronic. In the absence of malignancy or other gross uterine tissue changes the majority of cases of intrauterine disease have been loosely classed as endometritis with some qualifying adjective, such as senile, tubercular, hyperthrophic, hemorrhagic, putrid, etc., depending upon whether the clinician makes his classification from the standpoint of etiology, symptomatology, age of patient, or tissue changes.

Mathew Duncan, in lecturing on the subject, started by saying: "Who can tell what any one means by endometritis? Often its use is the cloak for ignorance and confusion." A glance through a few text-books will show that much confusion still exists upon the subject and every possible variety of classification will be observed.

Endometritis means *inflammation* of endometrium—the simplest and best classification is into acute and chronic, the latter divisible into glandular and interstitial, and this terminology is steadily becoming more universally accepted. The pathologist may sub-divide depending upon differences in histology but from a clinical standpoint these differences are without much significance. Aside from the result of gonorrhœal, puerperal and instrumental infections acute endometritis is of little importance. Chronic endometritis is the diagnostic waste basket which has received under its heading all cases of endometrial disease which are not readily or accurately otherwise diagnosable. As a matter of fact we are learning to know that chronic endometritis is a comparatively uncommon condition. In 1,000 cases of curettage in Kelly's clinic only two per cent. showed endometritis, and the condition was seen in only 1.2 per cent. of 1,770 cases at the University of Pennsylvania Hospital. The condition which is usually encountered in a simple case presenting the symptoms ordinarily considered due to chronic endometrtitis is an hypertrophy of the endometrium with perhaps some edema or congestion but without the microscopic characteristics which make up the phenomena of inflammation. Let us drop such terms as hypertrophic and hyperplastic endometritis as we

should the too frequent use of "cervical erosion," that really unusual condition which is so often confused with ectropion or macula.

Anspach, of Philadelphia, has for several years been carrying on rather extensive investigations into the etiology of cases of menorrhagia and metrorrhagia, especially about the menopause, which present none of the usual causes of uterine hemorrhage and which are unusually intractable to treatment. Until very recently he appears to have believed that these symptoms were due to changes in the myometrium and uterine vessels of a sclerotic nature with loss of the normal muscular tone of the organ and the control of its circulatory equilibrium, so to speak. His most recent investigations, however, lead him to believe that hemorrhage which can be traced to no other cause than myometrial disease may be due rather to an *absence* of that elastic and fibrous tissue development about the vessels and in the uterine wall which may be considered normal to the period about the end of the child-bearing age. Uterine hemorrhage in these cases is then due to engorgement of the uterine arteries and veins which are weaker than normal. It is certainly true that especially in women who have borne children it is the rule rather than the exception to find sclerotic changes.

In a recent series of fifteen cases of intractable hemorrhage in which the uterus was examined microscopically all but four could be traced to other causes than myometrial disease. In these four purely myopathic cases "the only suggestion of a lesion was an apparently lesser degree of arteriosclerosis than might have been expected from the parity of the individual."

This complete change of opinion after painstaking investigations lasting a number of years illustrates the obscurity which still covers many pathological conditions.

In the field of bacteriology much valuable work has been done, especially in investigating the infections of the gravid and puerperal uterus as well as the non-pregnant organ.

The works of von Recklinghausen and of Cullen have made us familiar with a new type of tumor—the adenomyoma of the uterine wall, which seems to have a symptomatology of its own.

One might continue indefinitely to recite advances and discoveries in this field, it is not possible in a short paper to more than

mention a few—a very few—of the numberless achievements of the workers in gynæcological pathology. The progress is most striking when we compare the knowledge of today with that of say fifteen years ago, as evidenced by the writings of the time. Nevertheless, a great unexplored field remains, beset with obstacles, but fascinating in its possibilities. No doubt the next decade will disclose to us such problems as the origin of dermoids and teratomata, the cause of myomata, and it may be that great goal of modern pathology, the etiology of cancer.

SOME RECENT ADVANCES IN SURGICAL PATHOLOGY.

J. D. ELLIOTT, M. D., PHILADELPHIA.

A tremendous amount of experimental work has been done in studying the effects of the extirpation of the parathyroid glands and it would be impossible to even outline all of it.

W. G. MacCallum and Carl Voegtlin have carried out a series of experiments to ascertain in cases of outspoken tetany after parathroidectomy the effect of giving various mineral salts which might occur normally or under pathological conditions in the animal body, particularly the soluble calcium salts. A second group of experiments was arranged for the study of the changes in the metabolism during tetany and in the chemical composition of the tissues in animals dying in that condition. The chemical characteristics of the excreta, constitution of the blood, brain, etc., were studied and compared with those of normal control animals. The calcium salts were first chosen because it had been observed that a lessening of them in the body has a decided effect upon increasing the nervous hyperexcitability.

From their experiments which have been partly borne out by clinical findings they have reached the following conclusions:

1. Tetany occurs spontaneously in many forms and may also be produced by the destruction of the parathyroid glands. Recent researches tend to demonstrate an intimate relation between various forms of tetany and relative or absolute insufficiency of the parathyroid gland.

2. The parathyroid glands are independent organs with definite

specific function. Whether or not this function is intimately related to that of other organs of internal secretion is not as yet proven.

3. The number and distribution of the parathyroid glands varies. Failure to produce tetany experimentally is probably due to the fact that some parathyroid tissue remains after an apparently complete extirpation. When extirpation is complete tetany appears, even in herbivora. Only a very small amount or parathyroid tissue is required to prevent this.

4. The effect of the extirpation of the parathyroid glands may be annulled by the reintroduction of an extract of these glands, even from an animal of widely different character. The active principle is associated with a nucleo-proteid in the extract and may be separated with the nucleo-proteid from the remaining inert albuminous substances. Its effect in counteracting tetany appears some hours after injection and lasts several days.

5. The parathyroid glands contain no considerable amount of iodine. The parathyroid extract is not an iodine containing compound.

6. In tetany there is apparently some disturbance of the composition of the circulating fluids ordinarily prevented by the secretion of the parathyroid, which disarranges the balance of the mineral constituents of the tissues. Possibly this consists in the appearance of an injurious substance of an acid nature for such tetany may be relieved by extensive bleeding with replacement of the blood by salt solution. No actual poisonous material has, however, been demonstrated by the transference of the blood of a tetanic animal to the veins of a normal one.

7. Numerous researches have shown the important relation of the calcium salts to the excitability of the central nervous system. Their withdrawal leaves the nerve cells in a state of hyperexcitability which can be made to disappear by supplying them with a solution of calcium salt.

8. Tetany may be regarded as an expression of hyperexcitability of the nerve cells from some such cause.

9. The injection of a solution of salt of calcium into the circulation of an animal in tetany promptly checks all the symptoms and restores the animal to an apparently normal condition.

10. Injections of magnesium salts probably have a similar effect, but these effects are masked by the toxic action of the salt.

11. The injection of sodium or potassium salts has no such beneficial effect, but rather tends to intensify the symptoms. This is true also of the alkaline salts of sodium which were studied especially in respect to their basic properties.

12. The effect of calcium is of value in human therapeutics in combating the symptoms of spontaneous forms of tetany and in relieving the symptoms in cases of operative tetany and thus tiding over the period of acute parathyroid insufficiency until remnants of parathyroid tissue can recover their function or new parathyroid tissue can be transplanted. It is in this way an important and convenient ally of the method of injecting parathyroid extract.

13. Studies of the metabolism in parathyroidectomized animals show:

1. A marked reduction in the calcium content of the tissues especially of the blood and brain, during tetany.
2. An increased output of calcium in the urine and faeces on the development of tetany.
3. An increased output of nitrogen in the urine.
4. An increased output of ammonia in the urine with an increased ammonia ratio in the urine.
5. An increased amount of ammonia in the blood.

Much of this affords evidence of the existence of some type of acid intoxication. Its effects are, however, not neutralized by the introduction of alkaline sodium salts and may perhaps be regarded as especially important in producing a drainage of calcium salts from the tissues, which can be remedied by the reintroduticn of calcium salts.

14. Emphasis must be laid upon the remarkable difference which exists between the alterations in metabolism following thyroidectomy and those following parathyroidectomy. In myxoedema there is lowered metabolism, decreased respiratory changes and lowered nitrogen output with depression of body temperature. In tetany there is increased metabolism, probably increased respiratory changes, certainly increase in nitrogen output and elevation of the temperature.

15. It is important, therefore, that in any experiments upon

metabolism in relation to the thyroid and parathyroid gland, these glands should be clearly distinguished as structures exercising very different and in large part contrary effects upon metabolism.

16. In general the role of the calcium salts in connection with tetany may be conceived of as follows: These salts have a moderating influence upon the nerve cells. The parathyroid secretion in some way controls the calcium exchange in the body. It may possibly be that in the absence of the parathyroid secretion, substances arise which can combine with calcium, abstract it from the tissues and cause its excretion and that the parathyroid secretion prevents the appearance of such bodies. The mechanism of the parathyroid action is not determined, but the result, the impoverishment of the tissues with respect to calcium and the consequent development of hyperexcitability of the nerve cells, and tetany is proven. Only the restoration of calcium to the tissues can prevent this.

17. This explanation is readily applicable to spontaneous forms of tetany in which there is a drain of calcium for physiological purposes, or in which some other condition causes a drain of calcium. In such cases the parathyroid glands may be relatively insufficient.

In the same connection Halstead has carried out a number of transplantations of the parathyroids and finds that isotransplantation has been uniformly unsuccessful, and no autotransplantation has succeeded, without the creation of a deficiency greater than one-half of such glandular secretion, then sixty-one per cent. succeeded.

Parathyroid tissue transplanted in excess of what is urgently required by the organism has not lived.

One autograft may suffice for many months and possibly years.

Excised or deprived of their blood supply in the course of operation upon the human subject, parathyroid glands should, in the present state of our knowledge, be grafted and probably into the thyroid glands.

Complete excision of the thyroid lobes in dogs may be well borne for a year or more. The myxoedema, which usually has manifested itself within a few weeks has not increased after the first few months. May it subsequently diminish with the hypertrophy of accessory thyroids?

Parathyroid tissue is essential to the life of dogs, as has been conclusively proved by the result of excision of the sole sustaining graft.

Another organ which has received much consideration is the pancreas. The etiology and pathology of chronic pancreatitis has been placed upon a fairly firm basis, but the acute conditions still require a great deal of thought.

Eugene L. Opie, one of the foremost workers upon the pancreas, and J. C. Meakins have carefully reviewed the literature upon this subject, and from several interesting autopsies which they describe in full, believe that the lesion usually designated acute hemorrhagic pancreatitis is primarily necrosis of the pancreatic parenchyma and may be caused by various, usually chemical, occasionally mechanical, injuries to the gland. The name hemorrhagic necrosis is preferable to acute hemorrhagic pancreatitis because the lesion is essentially widespread necrosis of the pancreatic parenchyma and the inflammatory changes which occur are secondary to necrosis or subsequent to bacterial infection.

The pancreas is not more susceptible to spontaneous hemorrhage than other organs; so-called pancreatic apoplexy is the result of acute pancreatic necrosis. In some instances pancreatic necrosis may cause little, if any hemorrhage. So-called gangrenous pancreatitis is a late stage of hemorrhagic necrosis.

Hemorrhagic necrosis of the pancreas is not primarily the result of bacterial infection, but in some instances subsequent infection of gangrenous tissue may cause suppuration.

The most frequent cause of hemorrhagic necrosis of the pancreas in man is penetration of irritant material into the ducts of the pancreas. Bile diverted by a gall stone lodged at the duodenal orifice of the common bile duct has produced the lesion in a large proportion of cases; duodenal contents entering the duct may have the same result. In a small proportion of cases pancreatic necrosis follows injury to the gland and is perhaps in part referable to simultaneous thrombosis of blood vessels.

Certain individuals are rendered susceptible to hemorrhagic necrosis of the pancreas by anatomical peculiarities or anomalies of their pancreatic ducts. In some individuals the passage of a gall stone may divert bile into the pancreas; in other perhaps the

structure of the ducts may be such that duodenal contents can find its way into the pancreatic ducts, and thus cause the disease.

George Emerson Brewer calls attention to the fact that under certain conditions the bacteria which find their way into the blood stream during an acute infectious disease are excreted through the kidneys. If the number of bacteria is large, their virulence high or the kidney diseased, lesions are produced, varying from a slight cloudy swelling or glomerular nephritis to a complete destruction of the organ by purulent infiltration or necrosis.

The lesions most commonly found are due to the plugging of the smaller arteries and capillaries with bacteria and these are surrounded by round celled infiltration. When larger trunks are involved, triangular infarcts are present; where the capillaries only are affected, minute abscess occur throughout the cortex and beneath the capsule. If the process goes further the bacterial emboli are rarely seen, only areas of necrosis and purulent infiltration. At a still later stage these parenchymatous foci of pus form abscesses which may rupture into the perinephritic tissue or the pelvis of the kidney.

To prove that disease of a kidney was a strong predisposing factor in directing a blood infection to that organ a number of animal experiments were undertaken. Broth cultures of various pathogenic bacteria, as the colon bacillus, bacillus typhosus, streptococcus pyogenes, staphylococcus pyogenes aureus, pneumococcus and others were injected into the ear veins of rabbits and dogs, and one kidney subjected to various forms and degrees of trauma. In other cases conditions simulating calculus were produced by injecting bismuth paste into the pelvis and ureter, while in others the ureter was ligated. In a large proportion of these experiments lesions were produced in the injured kidney identical with those found in clinical cases.

Richard H. Harte has collected one hundred and eleven cases of primary carcinoma of the appendix.

He has made a careful study of the various signs, symptoms and pathological data relative to this condition and finds that primary carcinoma is present in from one-third of one per cent. to one per cent. of all cases operated upon for chronic appendicitis. But few cases are collected at autopsy.

Institutions which make a thorough microscopic examination of all appendices removed at operation and at autopsy will report a larger percentage of cases of carcinoma of the appendix.

Carcinoma of the appendix, especially of the basal or spheroidal-celled type, is a condition of early life, occurring generally between the ages of ten and forty years. There is little tendency to metastasis and the origin of the disease is, as a rule, in the mucosa.

The disease appears to be slightly more frequent in females than males.

Acute and chronic inflammations are present and are responsible for the symptoms demanding operations. The growth, while localized, gives no pathognomonic symptoms.

The fact that primary carcinoma of the appendix takes its origin in an inflammatory process, forms a very strong argument for the removal of all appendices which show evidence of any irritation.

E. Libman and H. L. Celler have made an examination of one hundred and sixty-three blood cultures in one hundred cases of infections of otitic origin. The studies are of particular interest, for they help materially to decide the presence or absence of a meningitis or sinus thrombosis, for after a thorough mastoid operation, positive results were only found when these complications were present. In meningitis cases the pneumococcus and streptococcus mucosus have been discovered, but when streptococci were present the sinus was always involved, provided all other foci of infection could be eliminated. Part of their success in getting positive results was due to the early and frequent cultures.

The significance of their positive results lies in those cases in which a thorough mastoid operation has been performed and the otologist is not sure that further local disease is not present. The finding of streptococci in the blood then calls for an exploration of the sinus.

In certain cases, after the sinus has been explored and a clot has been removed and the jugular vein has not been ligated, the persistence of streptococci in the blood has given the indication to tie the jugular vein, and in almost all cases the bacteria then promptly disappeared from the blood.

Significance of negative results: Negative results can be obtained, even though not frequently, in cases in which a sinus

thrombosis is present. The absence of bacteria in a doubtful case should cause hesitation in exploring for a thrombus until the possibility of all intercurrent diseases have been excluded or until the symptoms have become so severe as to justify an exploratory incision.

If the blood cultures should be negative and the symptoms persist in a given case, whether there is a sinus thrombosis or not, acute endocarditis can be excluded. In such cases it is advisable to take two cultures as in endocarditis due to ordinary streptococci (in the author's experience bacteria are always found in the blood if two cultures are made.)

If there has been a sinus thrombosis and bacteria have been present in the blood, and the jugular vein has been ligated, a negative culture is of value in showing that the general invasion has been stopped.

Occasionally a negative blood culture has been of value in cases with a clinical picture of rheumatism. It is very valuable in such cases to know that we are not dealing with an arthritis due to a general invasion by the ordinary bacteria.

RECENT ADVANCES IN NEUROLOGY AND PSYCHOPATHOLOGY.

CHARLES D. FOX, M. D., PHILADELPHIA.

The confirmation afforded by the Wassermann reaction of our belief in the syphilitic origin of tabes and paresis, and the consequent value of the reaction in its application to the diagnosis of these diseases.

In 1871 Fournier first called attention to the great frequency with which a syphilitic history is obtainable in tabetics, and, because of this fact, he proposed that tabes be considered a para-syphilitic disease. Since then, many authorities have made investigations in order to collect statistics concerning the incidence of association of the two conditions.

In a monograph on tabes, William Erb (1) states that in his examination of 1,100 male tabetics of the better classes he found

that 89.45 per cent. had been infected previously with venereal diseases; 62.9 per cent. presenting positive evidences of secondary syphilis, and 26.34 per cent. acknowledged having had chancres. Judging from their descriptions, and from the treatment to which they had been subjected, many of the latter could be regarded as syphilitic. Of the remaining 10.55 per cent. many had probably been infected with syphilis. To control these researches, more than 10,000 non-tabetic men of the higher classes were examined. Of these, 21.5 per cent. had been infected; 9.8 per cent. having had a chancre, and 11.7 per cent. had secondary syphilis. "Therefore," the author remarks, "*among the tabetics there were almost 4 and ½ times as many infections as among the non-tabetic men* in the same class of society."

In the same monograph, statistics of many observers are tabulated and from these figures it would seem that the average frequency with which a syphilitic history is obtainable in tabetics is about 80 per cent.

The only personal investigation of this subject, conducted with Dr. Hicks, was an analysis of 25 cases of tabes. In this small series we found a history of syphilis and the presence of its phenomena to be positive, in 50 per cent., probable in 36 per cent., and absent as far as we could discover, in 14 per cent. of the cases. (2).

It is a recognized fact that physicians often are unable to discover evidences of syphilis, or to obtain a history of the disease in men, and more particularly women, who have been infected. Now as tabes and paresis usualy manifest themselves from 10 to 25 years after the infection, it is pre-eminently more difficult to detect the primary disease. Therefore, many, if not all, of those residual cases of tabes and paresis which we are unable to demonstrate as syphilitic are, nevertheless, suffering from the effects of syphilis. This imperfection in our diagnostic ability is well indicated by Hirsch (3) who, in speaking of 63 cases of late forms of syphilis, remarks that only 54 per cent. could be proven positively to have had syphilis, and that in 36.5 per cent. there was no proof of the former infection. These figures, however, are higher than those of Fournier, (4) who found syphilis ignorees in 3.10 per cent. of 3,862 males, and in 17.90 per cent of 395 females who presented tertiary syphilitic lesions.

In adverting to the etiology of paresis we find that the proportion of discoverable syphilis in this disease is about the same as that in tabes. After studying published statistics concerning paresis, Peterson (5) concludes that between 60 and 70 per cent. of cases of this disease are syphilitic. Furthermore, he estimates that syphilis has preceded only about 6 to 10 per cent. of all other forms of insanity. The same author cites Mott's study of 22 cases of juvenile paresis in none of whom syphilis positively could be excluded. Mettler (6) observes that a history of syphilis can be obtained in from 70 to 90 per cent of all cases of paresis. According to Mendel (7) 75 per cent. can be shown, by their histories, to be syphilitic, while in people in general, of the same age under similar circumstances, syphilis exists in from 15 to 18 per cent. The inability successfully to inoculate 9 cases of paresis with syphilis is a valuable experimental fact of which Krafft-Ebing has written.

It is interesting now to compare these anamnesic statistics with those adduced from the evidence afforded by the Wasserman reaction. It must be borne in mind, however, that a negative Wasserman reaction necessarily does not preclude the possibility of former syphilitic infection, for the reason that it has been abundantly demonstrated that there are spontaneous remissions in the course of late syphilis when the reaction cannot be obtained, and, furthermore, energetic anti-syphilitic treatment may cause negative sero-diagnostic findings in cases which previously had been positive.

As the Wassermann reaction is a very complicated diagnostic procedure, it has not yet been applied to great numbers of cases of any one disease.

Schutze (8) found that the reaction was positive in 66⅔ per cent. of 12 cases of tabes. A positive reaction was obtained by Lesser (9) in 56 per cent. of 61 tabetics and in 100 per cent. of 62 cases of paresis. The presence of syphilis in paretics, as revealed by the reaction, was observed by Wasserman and Plaut (10) in 78 per cent. of 41 cases; by Marie and Levaditi (11) in 73 per cent. of 39 cases; by Mayer and Proescher (12) in 83 per cent. of 12 cases; and by Stertz (13) in 95.5 per cent. of 45 cases. According to the experience of Castelli (14) the reaction was obtained in 100 per cent. of cases of paresis. Of 50 cases of paresis, J. W. Moore (15) secured positive Noguchi reactions in 96 per

cent. of the cases, and he states that in the majority of these cases the Wasserman reaction also was employed, but with less positive results.

Now, for the purpose of comparison it is well to mention briefly the results of the application of the reaction to syphilis per se. Ledermann (16) obtained positive findings in 100 per cent. of cases of syphilis of the nervous system in which the infection had existed for from 4 to 22 years, and in 100 per cent. of 16 children who presented inherited syphilis. Positive reactions were secured by Lee and Whitemore (17) in 89 per cent. only of their cases of syphilis, regardless of the stage of the disease, and in 95 to 100 per cent. of cases of active secondary and tertiary syphilis. They add that in all cases which are known to be free from syphilis the reaction is negative. In Butler's series of syphilitics (18) positive reactions were obtained in 100 per cent. of 10 cases in the primary stage; in 95 per cent. of 36 cases in the secondary stage; in 94 per cent. of 31 cases in the tertiary stage; in 56 per cent. of 16 latent cases; in 76 per cent. of 55 cases of parasyphilis and visceral syphilis; and in 100 per cent. of 11 cases of congenital syphilis.

As our belief in the syphilitic origin of tabes and paresis inductively has been amply confirmed by the Wassermann reaction, this procedure now assumes a deductive value, by being of assistance both in the diagnosis and in the treatment of these conditions.

FUNCTIONAL EPILEPSY.

The separation from epilepsy of the clinical syndrome to which the name psycholepsy has been applied is an example of recent neurologic and psycho-pathologic progress, which should receive the attention and acceptance which it deserves. Because of its great importance, both from the point of view of the patient as well as his physician, this topic was chosen to represent the field of psycho-pathology. On account of time limitation it is impossible to do more than call attention to this matter at present.

Indeed, we may well say that among the most notable of the many recent advances which have been induced by modern psychopathologic research is quite general recognition, by those who are interested in abnormal psychology, of the fact that all cases which formerly have been considered psychic epilepsy, many cases of petit mal, and, in fact, a not inconsiderable number of cases of

petiti mal, and, in fact, a not inconsiderable number of cases of supposed major epilepsy, are, in reality, not cases of epilepsy, but are manifestations of those psycho-neuroses which clinically are known as hysteria and psychasthenia.

We are indebted to Oppenheim, Sidis, Parker, White and others for their experimental work and for their masterly writings which have secured a firm foundation for the subject. These authors have reported many cases which at first were thought to be typical of some one of the types of epilepsy, but which subsequently were found by means of psycho-analytic methods, to be cases of psycho-genetic attacks.

As recent research has shown that epilepsy is incapable of causing any symptom which cannot be duplicated, or at least, simulated, by hysteria and psychasthenia, and as the crises, therefore, of these psycho-neuroses may be identical with those of epilepsy, we are unable now to make the diagnosis epilepsy simply because a patient is afflicted with seizures which conform to the classical textbook descriptions of those which are supposed to be characteristic of this disease.

The differential diagnosis of epilepsy and psycholepsy depends almost entirely upon psycho-analysis; especially upon painstaking search for dissociated or subconscious complexes which are capable of generating the crisis. For instance: if a case presents seizures which can be found to be due either to conscious, or to subconscious association of ideas; if, by some psycho-analytic method, a wealth of dissociated complexes which are capable of causing attacks can be discovered; if the patient acts upon suggestions imparted to him during the height of the attack; and, if the crisis can be prevented, either by ordinary, or by hypnotic suggestion, then his epileptiform seizures may be regarded as psycho-genetic (psycholepsy) no matter how closely otherwise these may resemble those due to epilpsy. Furthermore, among other points of dissimilarity in favor of the diagnosis psycholepsy is the fact that many of these cases have been subjected to prolonged and thorough courses of bromide treatment without having received any benefit from the drug, and that in those cases in which the condition has existed for many years, intelligence and memory have not deteriorated progressively. Amnesia, if present in these cases, is purely functional in character,

and events which apparently have been forgotten usually are capable of being recovered without difficulty by certain well known procedures. Finally, a psycholeptic generally can be caused, by means of hypnoidization, hypnotization, or by certain other agents, to remember events which took place during the height of an attack; it has yet to be demonstrated that this is possible in epileptics.

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DISCUSSION.

(Of whole report of Section.)

DR. JOHN EGE: I would raise the question if there is any cure for tabes dorsalis.

DR. C. D. FOX: We know of no remedy to cure tabes. Sometimes there are remissions in the course of the disease; in fact, it is almost characteristic of tabes. We have one case in the dispensary of the Hahnemann Hospital that has been coming to the department twelve to fifteen years. When he first came he could not walk in the dark, could not walk without cane, had sharp shooting pains. At present his condition is much improved, but he has the large pupils of the disease and he has the pain. He comes in about once in two or three months and claims that he is cured. He had had Rhus. tox. for as long as he has been coming to the department.

It is quite common to obtain an improvement under potassium iodide and mercury; but you can not cure your patient with those drugs. You can cause a removal of all the symptoms by their use, and it will never return again; but the disease is not cured.

DR. S. W. SAPPINGTON: In something I read by Sachs in discussing the Wasserman reaction, he said some time ago in Vienna a young physician had made researches about injecting rabbits with corrosive sublimate, and it produced in the spinal

cord the anatomic lesion of tabes. I suppose you saw that last week in the Journal of the American Medical Association.

DR. D. B. JAMES: Personally I am very much interested in the advance made in gynæcological pathology. I recall only a few years ago when it was impossible to obtain a text-book that would give you any information concerning microscopic work on the endometrium or the surrounding tissue about the uterus. I recall attempting to write a paper some ten years ago in which there was absolutely no data to be obtained anywhere that I could get hold of—although I even wrote to all the different universities and book publishers for such data. Of late years there is no doubt we have made remarkable advancement in the field of gynæcological pathology. The old term of endometritis has been dropped, due to the investigations of the microscope. It is impossible, in my opinion, to make certain diagnoses without submitting the tissue to the microscope; and that is one of the reasons that our old friend endometritis is gradually going out of use; because, as has been said, we attributed everything in the shape of bleeding to the inflammation within the uterus. We know by microscopic sections that such is not the case; and we are getting down in the recent investigations to the true causes; and by microscopic work we will get the true therapy of these diseases.

DR. THEODORE J. GRAMM: I regret not having heard the first part of the paper of Dr. Elliott; but as I came in, I did hear him say something that is of very great interest to me, namely, in regard to the extract of the parathyroid gland. This gland has only received attention within comparatively recent time. The extract of the gland is a very potent agent in the treatment of disease. I am using it in eclampsia; it is a long story; but if you will just notice what the doctor was saying in regard to the explanation, and as much as we know of its action, you will find that the parathyroid gland extract ought to be (as I am gradually showing it is) a very advantageous substance to use in this condition of eclampsia.

Of course, when we go to theorize, we are on quite unstable ground; but the probability is, that it will be ultimately shown that there are liberated in the placenta some substances which

possibly break up or prevent the formation of compounds of an organic nature and of an inorganic salt; for example, like lime or potash, which conditions determine the convulsions. Now, it is also a very interesting thought that the doctor called your attention to, namely, that a curative process, rather a curative action, may be obtained in altogether a different manner, namely, bleeding, and the injection of salt solutions, which also constitutes a part of the process of treatment that I applied with rather considerable success in the care of my eclampsia patients.

In regard to the treatment, I spoke of that yesterday; and I am very glad that Dr. Betts has called further attention to substantiate the views which I expressed at that time.

In regard to the hemorrhages at the climaxis, these are very interesting examinations that have been made with reference to the changes in the elastic tissue, particularly about the blood-vessels, as I showed at the last meeting of this Society in Philadelphia. Now, these changes hold good in a sclerosis, also; and while the treatment of such a condition involves the holding up of processes leading to senility, we know clinically that homœopathic medicines do act favorably in these cases. That is an accepted fact in our school; it is frequently demonstrated; it is capable of indefinitely being demonstrated; and we probably will, along the lines of this sort of study, be able to have proven to us just exactly why our homœopathic remedies act—that they actually do we are convinced; but just how they act is, of course, a question that is of great interest to us.

I am greatly pleased with these papers.

DR. N. F. LANE: I was interested to note the statement of Dr. Betts, which seems to upset the theories that we have been having in regard to the hemorrhages at the menopause, or about that time. For this meeting that Dr. Gramm spoke of in Philadelphia I wrote a paper which brought out that discussion; and at that time the investigations seemed to point toward an increase in the fibrous elements of the blood-vessels which caused them to remain open; and it seems to me, from the investigations that he reported, that the probability is that there may be a feeble condition, at times, and an absence of that tissue; at other times, an increase.

When Dr. Elliott closes the discussion on his paper, I wish he would tell us whether, after the removal of the parathyroids, the injections of the salts or the injections of the extract of parathyroids must be continued indefinitely, or whether a few injections will suffice.

DR. J. D. ELLIOTT: In these injections the experiments in animals with these parathyroid bodies has been rather difficult, because there are so many accessory thyroids, especially in the dog. In the dog the parathyroid glands frequently open in the thyroid gland itself, or because the two glands are separate organs entirely, they both can not be removed, or we get the effects of the removal of the thyroid as well as the parathyroid; therefore, a great deal of this work does not bear any results.

These dogs, in this paper and a number of other papers, were given these injections soon after having been operated upon, or as soon as they showed the signs of convulsions, and it was remarkable how quickly they cleared up. They cleared up perhaps in a half-hour, or fifteen minutes, with the calcium salts, the other salts more slowly; and perhaps the convulsions would remain away for a day, two days, or permanently; so that in certain cases with a parathyroid gland extract injection of the calcium salts will have to be kept on permanently until perhaps a new parathyroid gland develops, or an accessory gland develops, enough to take care of the body; otherwise, you just have to judge an individual case.

REPORT OF THE SECTION OF SURGERY.

The Indications for Operation in Disease of the Prostate, by L. T. Ashcraft, M. D.

Abdominal Adhesions, by R. C. Casselberry, M. D.

Fractures of the Skull and Their Treatment, by J. D. Elliott, M. D.

The Modern Surgical Treatment of Knee-Joint Diseases, by W. N. Hammond, M. D.

The Surgeon, Patient and Anæsthetist, by Arthur Hartley, M. D.

Kleptomania, by H. L. Northrop, M. D.

The Surgery of the Pleural Cavity, by Desiderio Roman, M. D.

Cholecystotomy versus Cholecystectomy, by Deacon Steinmetz, M. D.

THE INDICATIONS FOR OPERATION IN DISEASE OF THE PROSTATE.

LEON T. ASHCRAFT, A. M., M. D., PHILADELPHIA.

In this article but brief attendtion will be paid to the technic of operations since such has been minutely outlined in several of my former articles (The Treatment of Prostatic Hypertrophy, Hahnemannian Monthly, January, 1907, and Perineal Prostatectomy, Hahnemannian Monthly, June, 1909). We will consider only the symptoms necessitating operative interference. Let us discuss, first, the "bete noir" of all pathological conditions of the prostate—senile enlargement. Considerable difference of opinion still exists as to the necessity for operating. Some fear to subject the elderly man to the risk of operation, preferring him to lead a catherer life, but sooner or later the old man with an obstruction to the outflow of urine must come to operation. He will be driven to this, first, because of the discomforts and dangers attendant upon catheter life which he perhaps has lived for three or four years; second, on account of resultant infec-

tion of the bladder; and third, owing to urosepsis arising from diminished output of urea and retention of toxins. Should he decline operation he will die. It is true that he may die if he is operated, but the mortality of perineal prostatectomy is less than prolonged catheter life.

Although the treatment of prostatic hypertrophy is essentialy surgical, yet there are certain cases which can and must be managed medicinally and by mechanical means; otherwise, surgery may cause fatality or fail to relieve the symptoms. Every prostatic passes through these stages:

(1). Several attacks of congestion.

(2). Partial retention.

(3). Chronic congestion, and almost complete retention.

Acute retention may intervene at any time. In the first stage much may be done by internal and mechanical treatment.

Diet, hygiene and medicine play an important part. By moderation in diet, avoidance of cold, keeping the bowels open, and in acute urinary discomfort taking internal remedies and daily hot Sitz baths, congestion may be relieved. Chronic congestion, too, may be relieved by sounds and massage. The catheter or operation is demanded in the second stage only. Should acute retention occur, such must be relieved either by the catheter (tying it in until the attack is over) or by supra-pubic or perineal puncture. Prostatectomy is not indicated under such circumstances, since it is not an emergency operation. It is only in the second stage, that of partial retention, when the necessity for operative interference presents itself, and even here one must weigh very carefully the mortality of prostatectomy (it being about five per cent. from the perineal route) as against the dangers arising from catheter life for a period, say, of a year or so.

Of course the catheter is a dangerous thing, for it will infect the bladder; but years ago it was our main reliance. I always suggest to a patient the advisability of using a catheter for a few months and then if after a fair and intelligent use of this instrument life becomes irksome, then to resort to operation. Let us distinctly understand that the catheter is only a makeshift, as it were, to prepare the patient for his inevitable end, operation,

but it allows him several months of comparatively comfortable existence.

From the second stage on, that of partial retention, the prostatic is a candidate for operation under all circumstances, with perhaps an exception to be spoken of later.

When a patient presents himself with these symptoms, extreme frequency of urination, being compelled to urinate four or five times at night, dribbling of urine, suffering from over distention of the bladder (perhaps having as much as twelve ounces to a pint of residual urine) then operation is imperatively demanded. Again, several attacks of urinary retention demand operative interference because of the dangers arising from an attack possibly preventing the ability to pass a catheter. Again, those who have been a long time dependent upon catheter life where the bladder is in a state of atony are subjects for operation. These patients usually present many symptoms of urosepsis; not infrequently the bladder is markedly dilated and sacculated. The urine is foul, containing blood and pus, and sometimes vesical calculi are present. These patients not infrequently present all the evil effects of backtelling on the ureters and kidneys showing evidences of uremia; and here operation sometimes works wonders. A man who will submit to operation when his general health is good, when he has but four or five ounces of residual urine, runs very little if any risk. He who defers the operation until the stage where sepsis intervenes, of course runs a greater risk, but even here operation should not be denied the very old and infected man. He will surely die unless operated, and may recover as a result of the same. Only the highly infected and extremely ill should be denied operation.

A more extended knowledge of diseased conditions of the prostate shows many of them to be the subject of cancerous degeneration. Several that I have removed have shown decided malignancy, and many operators record this feature of hypertrophy as high as 10 per cent. Operation, then, is all the more indicated when one sees the dangers which may arise.

Abscess of the prostate arising from any cause (trauma, infection, either gonorrhœal or tubercular) furnishes indication for immediate operative measures. Otherwise the abscess may

break and cause rectal or perineal fistulæ, and because of slowness of these to respond to treatment, make the patient uncomfortable for life; or it may rupture into the peritoneum with fatal results; or it may break per urethram, drain insufficiently, thereby causing chronic suppurative prostatitis and reinfection or repeated abscess formation, or through the medium of the ejaculatory ducts cause chronic inflammation of the seminal vesicles, thus constituting what Bellfield terms "pus tubes in the male." Again, if unrecognized, prostatic abscess, by pyæmia, may be the direct cause of death.

Unfortunately tuberculosis of the prostate is incurable, otherwise enucleation might be attempted. Such is not the case in chronic inflammation and abscess of the prostate of gonorrhœal origin, and it is upon this feature of disease of the prostate that I wish to lay special emphasis, advocating the need for total enucleation of the chronically diseased organ where it has been rebelious to the usual form of treatment employed, such as massage, sounds and instillations. In the light of recent bacterial investigation chronic suppuration of the prostate may lead to genital tuberculosis, and it is responsible for the early physical decadence of the female sex. Let me prove this second proposition: James C. Wood, in a recent article, "The Tragedy of the Gonococcus," North American Journal of Homœopathy, September, 1909, quotes Nœggerath as follows:

"I do not believe that I go too far when I assert that out of every 100 wives who marry husbands who have had gonorrhœa, scarcely ten remain healthy; the rest suffer from it or some other form of the diseases which it is the task of this paper to describe and of the ten that are spared, we can positively affirm that in some of them, through some accidental cause, the hidden mischief will sooner or later develop itself."

More than twenty years ago Lawson Tait, in discussing the teachings of Nœggerath, contended that gonorrhœa is responsible for infinitely more suffering than is sphilis. He, of course, referred to the indirect results of gonorhœa as it affects women. These thoughts are by no means new, as every gynecologist knows the disastrous effects of gonococcic infection. What is

responsible for this? Nothing in the world but chronic prostatitis.

Considering the anatomy of the prostate and adnexa we can easily see why prostatic involvement occurs so frequently in gonorrhœa and why, once infection takes place, it is so difficult to cure. The prostatic urethra is 1¼ inches long and presents anteriorly on its floor the veru montanum, in front of which the two openings of the ejaculatory ducts are placed. On each side of the veru montanum are the prostatic sinuses into which open some fifteen or twenty prostatic ducts. A gonorrhœa commencing at the meatus and extending backwards to the prostatic urethra could not very well avoid infecting the "thousand-mouthed, succulent prostate," as Keyes terms it. Casper states that in 85 per cent. of all cases of posterior urethritis prostatic involvement can be demonstrated.

Once this portion of the urinary tract is infected it provides with its ducts, glands and sinuses, a hiding place for the gonococci, from which they can only be removed, if at all, with the greatest of difficulty.

There is a great deal of truth in the statement made by "Wolbast": "Were it not for the prostate, gonorrhœa would be a curable disease."

While every case of gonorrhœa does not infect the prostrate, the great proportion of them do so. Chetwood and other men claim that in every case of gonorrhœa there is an extension to the posterior urethra even though there are no subjective symptoms to show for it. If this statement be true, and admitting that it is with difficulty we can cure an infection of the prostatic urethra, we can readily see that the prostate is responsible for a great many cases of chronic gonorrhœa. In fact, it is claimed by some writers that chronic gonorrhœa and chronic gonorrhœal prostatitis are synonymous terms.

Granting, then, that these words are true, what shall be done with prostatics both auto and hetero infectious, those which cannot be cured by massage, instillations and dilatations? Are we justified in allowing a man to marry and infect his wife with such disastrous consequences? Certainly not! I think, therefore, I have pointed out very clearly that where all other means

have failed to eradicate these conditions, where repeated microscopic analysis show the disease to be confined within the substance of the prostate, that we should subject the patient to thorough enucleation of the prostate.

DISCUSSION.

DR. A. W. YALE: I would like to ask Dr. Ashcraft if he has read the statistics of the treatment of prostatitis by the high frequency current of high voltage. Dr. Snow, of New York, about a year and a half ago, wrote a paper (which has been published), in which he quoted a large number of cases—gave a report of the cures of over 85 per cent. of the chronic cases; and in the acute cases which were treated the cures ran, I believe, about 98 per cent. Dr. Titus has also marked success with this method of treatment; and if we, as physicians, can do anything to save a man, particularly an old man, from a surgical operation of serious moment, it seems as if it were our duty to try this means before resorting to the knife—particularly when it has been accompanied with such excellent results.

DR. R. W. McCLELLAND: While the general practitioner is not so perfectly familiar with the subject of the paper as some of our specialists, I think the general practitioner ought to be sufficiently well acquainted with it to know when it should pass out of his hands into the hands of the specialist. I have read the very remarkable paper of Dr. Wood, to which Dr. Ashcraft referred, and I think we ought to make one point in this, in the case of young men in whom the disease is found, and that is: the impossibility of telling with precision just when, or whether, the case is entirely free from infection. There may be cases of infected prostates in sufferers who were supposed to be rid of gonorrhœa or who imagined themselves rid of it. It is possible in cases that do not present any local or constitutional symptoms of any kind—that they are not entirely free from the infection which may lurk in the prostate.

DR. L. T. ASHCRAFT: Answering the remarks of Dr. Snow and the other gentlemen through our friend, Dr. Yale, I would say I would like very much, indeed, to have the pleasure of inspecting microscopic slides of the expressed secretion of

the prostate before I would pass upon the question of whether or not they were cured by the electric current. I would like to see slides, stained for the various cocci: if they are absent, he is cured; if they are present, he is not cured.

I have been doing some work with high frequency currents. I recently discharged such a case which was under my observation over a year. It was a case that had gone to Dr. Carleton, of New York, for an operation. He had referred the case to somebody in Pittsburg who was using high frequency, applications; and then he fell into my hands. He went to see Dr. Carleton about a month ago and Dr. Carleton said he was absolutely clinically well; but it was not a specific case.

It could not have gotten well if it had been a specific case.

DR. D. ROMAN: When it comes to making a decision as to whether a case is infectious or not—knowing the behavior of the specific micro-organism, the tendency for the gonococci to bury themselves into the mucosa and remain inert for an indefinite length of time—it adds a difficulty to the recognition as to whether a case of gonorrhœa has been cured or not. The more so, since they can migrate, not only through the mucosa but into the muscular layers, as Finger has demonstrated, and also find their way into the prostatic substance, and there lodge themselves for months and years; so that patients will acquire another attack, as it were, or they will call it a second infection, when it may be due to the old gonorrhœal infection which has been latent for years. Now, it requires expert manipulation to extract a discharge which will demonstrate the presence of the gonococcus. A specialist on the subject would resort to the perfomance of massage, and to sounding, before he would get the important drop which reveals the presence of the micro-organism; so that just the ordinary staining of specimens, or the drop squeezed from the urethra, may be altogether negative, and yet later on you get infection, either from modifications in diet, alcohol, over-exercise, etc.

A very interesting point in the paper was the fact of Dr. Ashcraft's conservative position in regard to the cases of prostatic hypertrophy, namely, that they are not all operative cases. That is true. The vast majority of them can be relieved by

skillful handling. It is well, always, as the doctor pointed out, in the cases of prostatic hyperthropy (which are not emergency cases at any time), that the time preparatory, as it were, for those cases, at the beginning, would lead us to suspect that an operation is required, is precisely the same technique as we employ in treating cases that will not require operation in the future. I think, therefore, that the points that are specific in his paper, the number of cases that require attention without operation, must be borne in mind. Not every case of prostatic hypertrophy will come under the knife, far from it; but all will necessitate careful handling, or the consequence is such as the doctor has pointed out, infection to the woman, as well as the complications of tuberculosis, carcinomatous hypertrophy of the tissue elements of the prostate; because carcinoma is nothing else than the proliferation of the normal tissue elements; but the constant presence of inflammatory irritation will commonly invite that proliferation.

ABDOMINAL ADHESIONS.

R. C. CASSELBERRY, M. D., CHESTER.

The consideration of abdominal adhesions should appeal to the general practitioner as well as to the abdominal surgeon, for they are such a frequent factor of ill health and obscure discomforts that they cannot be ignored.

The subject may be looked at from so many view points that it is difficult to do justice to it in a single paper, and so I feel it would be better to speak of it in a general way and not attempt to take up any special line of thought.

In this condition a large field is opened up for observation and investigation—one in which the surgeon must exercise those powers of observation and judgment which he must possess to his utmost.

The etiological factors are many and varied, indeed to such an extent that it is impossible to do more than make mention of some of them. The most frequent cause is probably local or general peritonitis. Any inflammatory condition in the abdomen may subside and leave no diseased condition, with the exception of the

forming of adhesions. An inflammation of the tube, appendix, gall bladder, etc., may all clear up, but there remain little bands connecting or constricting parts that otherwise should be free. No one can estimate the trouble that is stored up from a post partum infection, nor can we determine the involvement following a case of typhoid. Traumatism must also be considered, for the history of many cases can be traced back to an injury. Gastric ulcer may also be one of the causes. Post-operative adhesions are not always avoidable, no matter how careful the surgeon may be.

The conditions are so often obscure that it is only after a painstaking and exhaustive study of the case that we are able to arrive at a definite diagnosis. While there may be many symptoms in common, they are always more or less different in each individual case.

One case may give the history of repeated attacks of an inflammatory character in some one portion of the abdomen—another the history of a trauma. Still another may have the symptoms following an operation, and then again you may have a case in which the history is no help whatever. Yet in all of these there may be some symptoms very similar.

The symptoms vary, depending upon the location of the adhesion, and the idiosyncrasies of the patient. The character of the adhesions and the structures involved, the nearness to blood vessels and nerves, all influence the subjective symptoms. Where an adhesion is so formed as to make traction on a nerve or to impede circulation through a blood vessel, we are very apt to have severe pain at times. In a neurotic individual the symptoms are almost always exaggerated. I do not say that they do not have the pain and discomfort, but I do believe we have to discount to some degree their feelings as they describe them to us. They dwell so constantly upon their condition that their minds become filled with it and unless something is done we will have a case of melancholia or some other form of nervous depression to deal with.

It is these cases which give us the most trouble, although when we do succeed in accomplishing the desired results, the changes mentally and physically are so evident that we are doubly repaid.

Pain is present in most cases ranging from a slight discomfort and uneasiness, or a drawing, pulling sensation, to sharp, darting

pains. Patients may complain of a heaviness or weight in some region of the abdomen. It is this constant feeling of something being wrong that "gets on the nerve," so to speak, of the patient. Frequently it is the developing of this nervous phase that makes it imperative that something be done to alleviate the condition. A great many cases would be trivial if it were not for the mental anxiety they cause.

We can only come to anything like a positive diagnosis by elimination. If this method is adhered to, very few mistakes need be made. Of course, there are times when an exploratory incision is necessary, though, I am glad to say, these times are becoming rarer every year—due to the advancement of science in laboratory findings, as well as the improved methods of physical diagnosis.

The prognosis of abdominal adhesions in the great majority of cases is good. We should always attempt to instill in the patient as cheerful a consideration of their case as possible. The mental phase is so pronounced in most cases that when you overcome that, the battle is half won.

Our hardest problem is the treatment of these cases. After deciding it is a case due to adhesions, what should be our line of procedure? In the first place, we must know the life history of the patient, his habits and mode of living, his general physical and mental makeup, also any individual pecularities which may be present. Combining the subjective symptoms with those obtained after a careful physical examination, we should decide upon a definite course of treatment and stick to it. Where the condition appears mild, and not associated with any serious phenomena we must impress it upon the patient that if he follows out instructions the trouble will yield to treatment. I do not mean that all cases will clear up, but a great many will without radical measures. I believe this is explained to some extent by the parts adjusting themselves to the new conditions and the adhesions, stretching, allowing a free movement as before. In other cases the adhesions are so dense and firm that nothing short of a radical releasing will avail. Our success depends upon the methods we use, and these methods can only be determined by a careful analysis of the collecitve symptoms.

How are we to know that an adhesion will not cause serious

trouble in the future? Aside from the pain and discomfort it occasions, may it not be the *dam* which causes obstruction, sometimes with serious consequences? The different forms of tubal disease might be lessened if it were not for existing adhesions. An appendiceal adhesion may be the predisposing cause of a serious attack of acute appendicitis. Adhesions between different parts of the intestines cause constipation and auto-intoxication. They may also be the forerunner of an ileus.

During the past five years we have made a study of these cases at the Crozer hospital. While the results of some have been disappointing, the majority have been very gratifying. The cases are divided into operative and non-operative. The patient is instructed as to the diet, hygiene, exercise, etc. Medication is indicated. I have found the best results from bryonia, ignatia, belladonna, cimicifuga, nux vomica and hyoscyamus. Massage and electricity may also prove of value.

When relief is not obtained by methods mentioned above, and we are positive that adhesions are causing the trouble, we advise operation. Some cases when first seen are told that operation is the only procedure that will benefit them. These are marked cases and probably have been under the care of a physician for a long time, and to use palliative measures would be a loss of time. Surgeons differ as to the advisability of operating for adhesions. Where one would operate, another would deem it unwise. I believe you can only reach a decision after a careful consideration of every phase of the case. With our modern surgical technique we should not hesitate to advise operation, when in our judgment it would relieve the present condition and prevent a future complication.

The operation requires a complete knowledge of the abdominal anatomy, combined with patience and careful technique. Unless the surgeon pays the strictest attention to what he does, the condition will be no better, and may even be worse than it was before. A complete obliteration of all raw surfaces must be obtained wherever possible, if any good results are to be hoped for.

The need of thoroughness in this operation cannot be too strongly emphasized, for, unless the work is thoroughly done, it would be criminal to begin it. The physical condition of the patient must be

such as to warrant the operation. If it is not, the operation should be performed only in extreme cases.

I should like now to report a few cases which have been of more or less interest.

Case 1. Dr. G., age 50. This case was one of the first to come under my observation. The doctor, for about ten years, was under the hallucination that there was an adhesion in his left iliac region. He had been to the best surgeons in New York, Boston and Chicago, wanting them to operate him. They had refused, telling him that there was absolutely nothing wrong. He became so worried that he gave up his practice and traveled around trying to find relief. Finally, after actually begging to be operated, Dr. Lee, of Rochester, with whom I was at that time, consented to operate. An incision was made over the imaginary seat of trouble and that region explored. As expected, nothing wrong was found, and the incision closed. The patient was told a slight adhesion had existed between the colon and small intestine. From a worrying, fretful man, he became companionable and cheerful, making an uneventful recovery. I have written to Dr. Lee concerning this case and am informed that he has lost track of the doctor, but when he last heard of him he had returned to his practice entirely rid of the old sensation of discomfort. This was a case of purely imaginary trouble which had so preyed upon the mind as to make it real to the patient.

Case 2. F. Y., female, aged 15. I was called in consultation to see this case August, 1905. Patient had pain in right iliac region for thirty-six hours. An immediate operation was performed for appendicitis—the appendix pointed downward and inward, bound to the pelvic floor and ileum by adhesion, was very much swollen and apparently about to rupture. There was considerable inflammation of the surrounding tissues. The appendix was removed and the adhesion tied and cut. Patient made nice recovery, and left hospital free from pain and discomfort. Two months after complained of pain in the seat of operation, which continued for several weeks without relief. A second operation was performed—the old scar being removed and several adhesions found which were tied and cut or sewed over. For several months she seemed perfectly well, when she again complained of pain in the same region. She was again sent to the hospital. We noticed that the patient was

highly neurotic and contradictory in her statements. She became so imbued with the idea that there was something serious the matter with her that she almost refused to walk—when she did walk it was in a crouching attitude with the body at almost right angles with the lower extremity. She contended she could not straighten out her right leg which was flexed on abdomen constantly. As a last resort, after massage and electricity had been thoroughly tried, the patient was told that her only chance was to stretch the leg and adhesion under an anaesthetic. This was done and a Bucks extension apparatus, with weights put on for about two weeks. She was discharged from the hospital, walking erect, with a disappearance of all the former symptoms.

This was a very interesting case because there was a distinct attack of appendicitis associated with adhesions. Both were removed, but they developed a mental condition that was harder to treat than the physical. The patient really became "hippy" and made her family miserable with her constant complaining. When all our treatment failed and she was told there was only one chance for her in stretching the adhesion, she came to her senses with the good results stated.

The stretching of the leg amounted to nothing for as soon as the anæsthetic relaxed the muscles, the leg straightened itself.

This case was also interesting from the fact that there was an abnormal physical condition to begin with and an abnormal mental condition developing after the abnormal physical condition had been corrected. The mental phase became more serious than the physical, but both cleared up very satisfactorily.

Case III. M. P. Female, aged 30. Was operated July 1907. Gave a history of having typhoid fever in 1904, from which time she had constant pain in right iliac region associated with considerable digestive disturbances, which would not yield to treatment. The attending physician sent her to the hospital to be operated for chronic appendicitis. The appendix was found slightly thickened but otherwise in normal condition. There were, however, several bands of adhesions between the cæcum and ilium and other coils of intestine in the right iliac fossa. These were tied and sutured over and the incision closed. These

adhesions were in all probability due to the attack of typhoid fever three years before. I saw her physician a few weeks ago and he told me that since the operation she had been free from all indigestion and there was an entire cessation of pain.

Case IV. E. D. Female, aged 22. Was sent to the hospital by her physician, who had diagnosed a mass in the right side. The operation revealed both ovaries and tubes normal, but the left tube and ovary were bound to the bowel by a single adhesion. This was removed and the wound closed. No doubt there had been a local pelvic peritonitis, which cleared up leaving the adhesion found at the operation.

Case V. M. W. Female, aged 30. While this case is not exactly in line, I want to report it on account of its uniqueness. The patient was operated for pyo-salpinx. The tube, ovary and appendix were all found bound together, and removed in toto. The adhesions were of such character that it was evident that they had been formed prior to the acute attack of pyo-salpinx.

DISCUSSION.

DR. J. D. ELLIOTT: The cases of Dr. Casselberry show how hard it is to make an absolute diagnosis. A case I saw in the Hahnemann Hospital last year was operated for appendicitis, but it turned out to be a tubercular peritonitis. There was a mass that ran six inches across, and both above and below; and yet that man had not a sign of any obstruction as the intestines worked their way in and out of it. Another case was that of a woman who gave a history of attacks of bowel obstruction, not complete; only a slight fibrous band was found on operation, and after it the symptoms cleared up. Whether they were psychic, or not, I do not know. So that these cases, when they are operated, have to be very carefully diagnosed; otherwise operations are useless, and adhesions may re-form; but adhesions *per se* do not do the damage; it depends on their location.

I had an interesting case of appendicitis last summer in connection with pus. The pus was non-localized and the patient was operated, and did nicely for four or five days, when symptoms of bowel obstruction developed; and he died. The post-mortem showed band down against the back of the pelvis; one

of them ran down further than the others, three of them were lying right against each other; two loops, of intestine, one upon each side, had become adherent and had cut off a small kink in the middle loop, causing bowel obstruction. Even if we had known the lesion, nothing could have been done.

DR. H. L. NORTHROP: I am not surprised that the Society does not spring to its feet to discuss this paper; because (differing from you, if you please) it is an uninteresting subject. We all dread abdominal adhesions. They are serious things. I suppose an abdomen is seldom if ever opened without adhesions resulting. And I wonder if the day will ever come when the peritoneum can be handled and dealt with and no adhesions result.

One peritoneum differs so much from another in its susceptibility, its vulnerability. You can do almost anything with one peritoneum—you can abuse it and no serious adhesions will result; peritonitis, at least, will not follow such action. On the other hand, if you make a small opening through the abdominal wall in some cases and—I was going to say—look at the peritoneum, peritonitis, perhaps fatal, will follow; so it is impossible to tell just how many adhesions will form, or how indifferent, or how serious they are going to be; and, as the doctor in his paper, and Dr. Elliott in discussing, have said, one adhesion, or a band which is hardly an adhesion, will produce serious results, if not physical at least mental; and then, back again, serious physical results.

I recall one case where one ovary had been removed by Dr Parrish, of Philadelphia; and years afterwards the patient suffered from obstipation, and even from intestinal paresis. I opened the abdomen to see what could be done, if anything, for the relief of this serious condition. I tied one single band—getting as the result of inflammatory action localized peritonitis almost extending from the under surface of the transverse colon down to the right broad ligament. This band touched upon the transverse colon to such an extent as to interfere seriously with the fecal current through it; and that, as after results proved, was the result of the obstipation; in this case, just one single band.

I know a woman who has been operated upon; both ovaries removed; and she suffers off and on from adhesion so seriously as to put her to bed; and on two occasions has had to submit to an operation. I know a gentleman out of town who was at the house years ago, and whose appendix was removed while there; who came back home; and whose cæcum and part of whose ileum was resected by the late Dr. Fisher, and who has repeatedly suffered since from abdominal adhesions, and who makes a biennial tour to Philadelphia to have his bowel obstruction overcome by laparotomy. He is literally filled with adhesions; he manages to go about two years and then has to be opened up.

What can we do for such cases? Open the abdomen, divide the adhesions; and, of course, they re-form at once. We heard years ago a good deal about cargile membrane; it was supposed by its use we could prevent the re-formation of these adhesions. It is practically discarded today, so far as I know. Our local surgeons, so far as I know, do not look upon it with any favor. All that we can do is to divide the adhesions, and trust they will not form as seriously as they did and not be as numerous as they were; and that is about all.

This is really a very serious question; although an uninteresting one, to my mind, as I started to say; because you do not like to open these cases and operate upon them; yet we have to do it. There is much greater pleasure and much more honor in opening an abdomen for the first time, than to take a case which somebody else has opened previously, or perhaps we ourselves have operated upon, and spend an hour, or two hours even, breaking up adhesions and doing something which we know will be more or less futile in the long run.

DR. W. N. HAMMOND: Cargile membrane, as Dr. Northrop said, has been practically discarded. I think the trend now is toward the prevention of adhesions through physiological means. The tendency, after laparotomy, is to leave the bowel as loose as possible. Some surgeons give morphia, believing this gives the peritoneum the best chance to recover, with least chance for peritonitis.

If you are operating upon the ovary do as the gynæcologists do, cover up the peritoneum, as far as possible, cover all parts

that have been denuded; and then, as soon as safe, or as soon as possible, get a gentle peristalsis—the best results will possibly follow in preventing the formation of adhesions. Just as in the knee-joint, where we have a tendency to adhesions forming, by massage, by gentle passive and active motions much benefit is derived; so, where there is a tendency for them to form in the abdomen, if at a safe time you gently stimulate peristalsis their formation can be prevented. In other words, do not allow laparotomies to go too long without some peristalsis, without some stimulating.

I believe that atropin and eserine have done a great deal toward the prevention of adhesion without unduly exciting peristalsis and interfering with healing in intestinal work. Another point about adhesions that I might speak about is the formation of adhesions about the gall-bladder. In an attack of gallstone, we know that in the early days there were very few adhesions and we were very apt, if the patient recovered, to allow him to lag along and take time and take time until eventually the symptoms got so serious that the patient, having grown older in the meantime, needed an operation imperatively. These cases should be operated on earlier in life, on account of the formation of the adhesions which occur after repeated attacks of gallstone.

DR. JULIA GOULD WAYLAN: I am interested in a case of this kind. I have a little girl who was operated on for appendicitis about five or six years ago; there were no adhesions, so far as I know; and there was a very small incision and very slight manipulation. After five years of comparatively good health, she has been suffering very much from the site of the operation; and there are reflex nervous symptoms, such as headaches, and especially pain at the site of the operation, and that after any exertion, even after very slight exertion. I would like to know very much if the gentlemen of this bureau really suppose this to be caused by adhesions and still the case be quiescent for five years.

DR. N. F. LANE: The fact has been brought out that adhesions of themselves cause no trouble. It has led me sometimes to try to prevent adhesions by floating the intestines on water, when adhesions are very extensive. Just before closing

the abdomen, introduce a salt solution into the abdomen, when the blood around the intestines will assume a normal and natural condition, a natural composition, and thus avoid any symptoms in case of adhesions occurring; and they are bound to occur in all these extensive pelvic operations. You can not cover in an area of anywhere from 6 to 12 sq. in. in these serious inflammatory pelvic operations.

The other fact brought out is this: That it is not usually the extensive adhesions that cause the trouble. It is the single small adhesion that is restricting the intestine, or some portion. I opened an abdomen the other day following an acute peritonitis which followed delivery. The mass in the abdomen felt hard as a fibroid; extended up above the umbilicus; and in opening it it was found to be an abscess, whose walls were rigid. There was no collapse after we evacuated the abscess; there was a hole down there; the abdominal wall stood up away from the intestines below. That girl has no trouble whatever, and she has not had any trouble, as far as obstruction, or pain from adhesions, goes. Of course, that will all absorb, more or less, all fill in; and probably she will have no pain nor trouble from adhesions.

It is not the extent of the adhesions; it is their position. As I said before, it is usually one small point that gives the trouble.

DR. D. B. JAMES: This, in my opinion, is an exceedingly dangerous and interesting subject. One, I know, has to go through the thing with some personal friend, for instance, as I went through with my room-mate, Dr. Cookman, thirteen years ago—one of the coming lights in our profession. The case was one which died after a surgical operation that was performed some two years previously; being that of a mother with four children, delivered of a child five days before she dies following post-operative adhesion; operated two years before for an ectopia; becomes pregnant; is delivered of a normal, healthy baby; starts her recovery rapidly; progresses nicely; is suddenly taken with a sharp pain; is operated within twelve hours and a complete bowel obstruction nowheres inside of the operation; every thing clean on that side.

Last week I operated on a case brought in three days old, following a case operated on two years ago by myself, at the site of

the operation there was no adhesion, but away off on the other side was a bowel obstruction; she suffered three days and died on the table. We are dealing with a very serious proposition. That case that I referred to of the ectopia probably answers Dr. Waylan, to a certain extent. A perfectly healthy woman from the time she was operated for ectopia. A sudden exertion; the intestines taking a kink; adhesions; one band away up to the left side of the umbilicus; her former operation having been on the right side; and she died.

In all cases where it is possible in the broad ligament I do not use the ordinary whipping over method, but attempt to invert or turn inside the two layers of the broad, so that I can stitch it, so as to make a smooth line, as far as possible.

DR. ANNA C. CLARKE: May not these adhesions which you find in the remote parts of the abdomen from an operation be due to other diseases than those incident to the operation? I know of one case in my own experience where a patient had been operated upon, and had made a good recovery; we had no symptoms whatever; and three years after in a street car was punched in the other side, in the upper side of the abdomen; and in a little while after she suffered a good deal of pain; that is, the operation being in the lower right hand part of the abdomen, and the injury (the punch) in the upper left hand end; and it was thought at the time that it was a post-operative adhesion; but upon opening that abdomen we found a clot of serum exuding, and there is no doubt about its being from the injury received in the street car. I think sometimes surgery gets blamed for more than it's due.

DR. R. C. CASSELBERRY: In pelvic adhesions where there are a great many of them, sometimes I know that olive oil has been used—Russell's olive oil. I know one physician who has used as high as a quart at one time. I do not know what the results were afterwards. Mention of saline brought to mind the olive oil. I have never used it and never seen it used.

FRACTURES OF THE SKULL AND THEIR TREATMENT.

J. D. ELLIOTT, M. D., PHILADELPHIA.

During last winter's services in the wards of Hahnemann hospital it was my fortune to meet a number of interesting cranial lesions. From these I have chosen to review the fractures, 14 in all. This is too slight a number from which to draw deductions, but I will briefly outline them to bring out some of the points I will discuss later.

I. Hospital Record No. 10,740. J. H., 26 years. Patient was struck on the head by a beer mug and sustained a lacerated scalp and a linear fracture, one inch in length, in the left parietal bone. The only symptoms were pain and momentary unconsciousness. The outer plate of the skull was removed over the fracture, but the inner table was intact. The wound was closed, and at the patient's request he was discharged five days later with no new developments.

2. Hospital Record No. 10,859. W. E. F. Patient was struck by a train, sustaining contusions over body and a compound, multiple, depressed fracture of the right parietal, right temporal and occipital bones, extending to the base in middle and posterior fossae. On admission to the hospital he was unconscious and in a state of collapse, while the diagnosis was self-evident. The depressed pieces of bone were removed, revealing a laceration of the meninges and brain and the wound closed except for a gauze drain. The patient showed little effect from the operation, he remained delirious, was violent, had retention of urine, though the bowels moved freely from castor oil. The temperature ranged from 99° to 100°, pulse 70-100, until the fourth day, when it jumped to 104°, pulse 140, respirations 40. The symptoms became progressively worse and death took place on the sixth day.

3. Hospital Record No. 10,949. J. D., 15 years. Struck with heavy block on back of head and was unconscious for a few minutes; he again become unconscious after he had been taken home and began to vomit. On admission to Hospital he was conscious, but rather stupid, and projectile vomiting continued. Examination of scalp showed a large contusion on the right side and some hemor-

rhage from this ear. An exploration of the skull discovered a fissured fracture beginning in the right side of the occipital bone and running downward and forward through the right parietal and temporal bones to the base of the middle fossa. An opening was made with a gouge and mallet and the fracture followed to the temporal bone, where a fair sized haematoma was found, the blood coming from a laceration of the lateral sinus. The bleeding was controlled by a pack and the rest of the wound sutured. Temperature next day was 99° ax, pulse 78 and strong, while the patient was somewhat drowsy and continued to vomit. The maximum temperature was on the fourth day 100.10, and became normal soon after removal of the pack on the seventh day. He was discharged on the eighteenth day with wound perfectly healed.

4. Hospital Record No. 11,084. W. F., 11 years. Ran into a post, striking it with his head and causing a haematoma over right eye. When brought to the hospital the patient was stupid and he had ecchymoses over and in the right eye, slight rigidity of the left arm and leg, and the left patellar reflex lost. The pupils were normal. Exploration over the right Rolandic area disclosed a fissured fracture in this region. On trephining the dura bulged into the opening, but pulsation was present. The membranes appeared oedematous and at one point discolored, and here the dura was opened, but nothing was found except a very free flow of cerebrospinal fluid. A drain was placed only to the opening in the bone. The patient was unconscious and restless for about ten hours, but then became perfectly, rational and made an uneventful recovery. Discharged on the seventeenth day with the wound healed.

5. Hospital Record No. 11,087. T. T., 54 years. During an attack of vertigo patient fell and struck his head. Brought to the hospital unconscious, with a contusion of the left eye and this pupil dilated and fixed. Exploration found a fracture of left frontal bone running to the base of the anterior fossa and involving the roof of orbit, with cominution of the inner plate. After enlarging the trephine opening and removing the fragments of bone, a pack was applied on account of severe hemorrhage and the wound sutured. During the next 24 hours the patient was rational, the pulse was weak and reached 128, but strychnia readily controlled this and vomiting of dark brown fluid continued. The maximum tem-

perature was 100.10, pulse 90-110, on the third day, and the patient was discharged on the twenty-sixth day with a small sinus persisting.

6. Hospital Record No. 11,089. L. W. M. Knocked down by a wagon and entered the hospital in a dazed state. The principal symptom was bleeding from the right ear. Exploration brought to view a fissured fracture of right parietal bone running through the temporal to the base. This was enlarged and a number of epidural clots removed and the lower angle of wound packed to stop bleeding. The temperature was practically normal throughout and the pack was removed on the second day. The patient's mental condition was not strong, but gradually improved, and he was allowed to go home on seventeenth day. He reported to us for two months when he was in fair condition mentally and physically. After a disappearance for five months he came back suffering severely from psychasthenia and was referred to Dr. Fox, who treated him with excellent results for two months, after which he again failed to return. The operation had little or no effect upon his condition, which was due to the shock of the accident, and none of his symptoms pointed to an organic lesion.

7. Hospital Record No. 11,121. J. K., 65 years. While intoxicated the patient fell and was unconscious when brought to the hospital. On account of intoxication a satisfactory examination was impossible. A contusion in the occipital region was explored and a fissured fracture, extending from the occipital bone, almost directly over the superior longitudinal sinus, to the base, trephined with the removal of a large haematoma. Recovery was easy and the patient was discharged at his own request on the sixteenth day, with the wound healed.

8. Hospital Record No. 11,198. J. P., 14 years. Fell down stairs, striking on head. Was sleepy when admitted to the hospital and began to vomit, temperature was 98.2°, pulse 100 respiration 26. There was some irritation of the left hand, the right pupil was dilated and there was a contusion in the right parietal region. Exploration showed a very slight fissure in the squamous portion of the temporal bone, which ran into and caused a separation of the squamous and squamo-sphenoidal sutures and thence to the base. The fracture was enlarged, a clot turned out and hemorrhage from

the middle meningeal artery controlled by a pack. The patient became rational in fourteen hours, the maximum temperature, 100°, was reached on the fourth day, and he was discharged on the seventeenth day with the wound healed.

9. Hospital Record No. 11,218. S. K. Fell down two stories in an elevator shaft and landed on head. When brought to Hospital both eyes were swollen shut, there was a large contusion over left side of forehead, the blood literally poured from his nostrils and the patient appeared moribund. Without anaesthesia the left half of the frontal bone was immediately exposed, presenting a fracture running to the base. When trephined blood and fair sized pieces of brain came through the opening which was quickly enlarged for about an inch and a half. This enabled us to place a gauze drain under base of frontal lobes and hemorrhage from the nose ceased. The patient was hurriedly placed in bed and treated for shock. The next day he was in a stupor, but could be aroused sufficiently to tell his name, etc., and his mental condition continued to improve until in seven days he was rational, but drowsy and rather irritable. On the twenty-eighth day he was discharged with a clear mentality, but very little sight in his left eye, almost complete deafness of his left ear, the reflexes of the right arm and leg were lost and the muscles of these limbs slightly weaker than on the other side. He was referred to Dr. Tuller for further treatment. Much of the success in this case we attribute to free purging with castor oil, two to three pints of hypodermoclysis daily for the first week, and the untiring care of Dr. Joss, our house surgeon.

10. Hospital Record No. 11,337. T. H., 74 years. Fell down stairs and was brought into the hospital in a deep stupor, temperature 96° ax., high tension of pulse of 72, with sclerotic vessels, respirations 24, both eyes ecchymosed, pupils dilated, hemorrhage from nose, and a laceration on right side of head. A fracture beginning in the right parietal bone could be seen and this was enlarged and followed to the base where it extended into the roof of the orbit. The membranes over the frontal convolutions were torn and a subdural clot had formed in the lacerated brain substance. The clot was turned out, but free hemorrhage required a drain under the dura. The convalescence was rather tedious as the patient, though rational, was drowsy and exceedingly irritable and restless.

symptoms referable to the location of the lesion. The drain was removed on the seventh day, but no effect was noticeable. The urine was involuntary but scanty, so hypodermoclysis was given twice a day, and he was freely purged, though with difficulty. The irritability gradually disappeared and he was discharged in good spirits on the forty-eighth day.

11. Hospital Record No. 11,421. C. Le G. After committing a murder the patient was severely beaten up over the whole body, suffering a number of contusions and lacerations of the scalp. A depressed fracture in the right frontal bone could be distinctly felt, but this, upon exposure, proved to be an ancient one. The other lacerations were quickly enlarged, and a slight fissure found in the left parietal bone with a small hemorrhage beneath. Recovery was uneventful and he was turned over to the police on the fourteenth day.

12. Hospital Record No. 11,763. H. F., 38 years. Thrown from driver's seat on a hansom. No neurological findings, but a contusion in region of the right parietal bone. Exploration brought to view a fissure running over to junction of the sagittal and lambdoidal sutures with a separation of the left lambdoidal and occipito-temporal. The fissure was trephined and a small epidural clot removed. Maximum temperature was 100° ax. next morning and it was normal on third day. No change in his mentality was apparent, though he several times removed his dressings, however, this seemed to come from natural perverseness as he was perfectly rational, but refused to believe he was seriously injured and complained of the bandage feeling tight. He insisted upon leaving on the fifteenth day when the scalp showed only a few superficial granulating spots due to the severe contusion.

13. Hospital Record No. 12,041. T. H., 39 years. Fell from roof of house, but showed little evidence of injury to the scalp. On admission the patient was semi-conscious, the pupils were irregularly dilated, there was bleeding from right ear, other signs were negative. Exploration in the right temporal region disclosed a fracture of the parietal and temporal bones extending to the base in middle fossa. Upon enlarging this a large epidural clot was evacuated. During his convalescence he complained of severe headache, dizziness and showed some symptoms of chronic alcoholism.

His wound was slightly infected in the soft parts, but this cleared up readily, and he was discharged on the twenty-first day, still complaining of slight dizziness after standing for a long period.

14. Hospital Record No. 13,350. J. J. McS., 43 years. An alcoholic, also an epileptic, fell during a convulsion. On admission was slightly stupid, pupils were normal, there were no paralysis, but a severe hemorrhage from left ear and a slight contusion above it. Exploration showed nothing until the mastoid was well exposed when a very slight fissure, beginning just above the lateral sinus and continuing to the base, was made out. The question of operating was a delicate one on account of the proximity of the sinus. After careful consideration it was decided to follow the teaching, so forcibly laid down by Dr. Van Lennep, to look at the bottom of every fissure. An opening was made with a gouge and mallet in the squamous portion of the temporal bone and enlarged to the fracture with rongeur forceps. Several fragments of the inner plate were driven into the brain and one into the lateral sinus, the latter causing the hemorrhage, which was easily controlled by a pack and the rest of the wound sutured. Seven hours later another convulsion occurred and the temperature rose to 104° ax., pulse 140. The resident surgeon removed the pack without our advice but fortunately no hemorrhage occurred. Delirium tremens developed almost immediately, there was vomiting of some old blood, involuntary stools and urination. He was seen in consultation with Dr. Tuller and received nux vomica, hypernutrition and plenty of whiskey. His temperature fell steadily, but did not reach normal until the fifteenth day, partly on account of some infection of the scalp. He was rational on the fifth day and was discharged on the twenty-ninth day, with a sinus down to the bone, which healed rapidly under treatment at the dispensary.

A fracture of the skull derives its interest and importance, not from the lesion of the bone, but from concomitant injury to the delicate organ it contains and the sequelae of such an injury, and this must be particularly borne in mind when considering the treatment.

A number of theories concerning the mechanism of cranial fractures has been put forth, but Von Wahl's classification of bending and bursting fractures has been generally accepted. To understand

the bursting fracture the skull which we know is elastic should be viewed as a hollow ball. When a blow is applied at one point, this point and one directly opposite will be forced closer together, that is, the diameter lying in the direction of the force will be shortened, and, conversely, all diameters perpendicular to it will be lengthened. Taking the first two points as the poles of the now flattened sphere, the greatest circumference will be midway between them, that is in the equator, and it is in this line that the greatest stress will be felt and solution of continuity begin in one or more places. Similarly all circumferences parallel to the equator will be increased, and if the force is continued, each in turn must give away until the poles are reached, so that the line, or lines, of fracture will be perpendicular to the equator, that is in an arc of the circle parallel to the direction of the force. At the moment of fracture the edges must separate, but as the skull, through its elasticity, resumes its normal contour the opening closes leaving only a linear or fissured fracture.

However, other factors must be studied, for the above conditions would only apply to a sphere of equal strength throughout, while certain areas of the skull are not so strong as others. The base is considerably weaker than the vault, so it is the part most frequently broken.

There are certain arches, the so-called buttresses, which strengthen the vault as well as the base, and weaker bone lies between them. One lies antero-posteriorly extending through vault and base from the glabella to the inion. The others are transverse, the anterior running from the body and wings of the sphenoid bone through the external angular process and temporal eminence to meet in the mid-line. The posterior originates in the basilar process and arches through the petrous portion of the temporal bone and the parietal eminence to the mid-line. The transverse arches thus divide the base of the skull into three fossae, the anterior, middle and posterior.

A fracture commencing in the vault and extending to the base may have its course changed by the heavier bone of the buttresses and be confined to one fossa. This rule is not always true for not infrequently two, and occasionally all three fossae are involved.

Again the line of fracture may run into and continue in the weaker sutures.

The bending fracture is due to stress applied in a small area, so that first the convexity of the skull will be flattened and finally bent in until the bone gives way at the point of impact. The skull, which is composed of two tables with the loose diploe between, will not be uniformly injured throughout its thickness. As the outer plate is flattened, the lines of force become divergent so that when it presses upon and breaks the inner table the fragments of the latter are driven apart and the injury to it is often greater than to the outer plate. Formerly this was wrongly ascribed to the brittleness of the inner plate, therefore called the vitreous plate, for with the conditions reversed the lesion will correspondingly differ. A number of cases have been tabulated in which a spent bullet, penetrating from the opposite side of the skull, has struck the inner plate, causing a simple fissure of it and a comminution of the outer.

A combination of the two is not rare and a depressed fracture with one or more fissures running from it will be found.

A third class has recently been added, but it is almost invariably encountered in military surgery, so will only be mentioned. It is due to the modern rifle which discharges a bullet with high velocity into the incompressible, semi-solid brain and drives it with great force against and shatters the skull.

As stated, the important element to be considered in these lesions is the damage suffered by the brain. This may be contusion, so slight that unconsciousness does not occur, or if death takes place a microscope may be necessary to reveal minute lesions, or so great as to cause extensive laceration of the meninges and brain substance; or compression which may be localized or general and due to bone, hemorrhage or other foreign bodies or to oedema.

The symptoms may be immediate, develop within a few days, or remote, due perhaps to sclerosis or softening of brain tissue around a laceration or foreign body.

Though a great deal has been written about the remote effects of cranial injuries, their symptomatology and operative and medical treatment, too little stress has been placed upon their prevention. Late operations have been disappointing in a large number of cases,

and this is easily understood, for a small primary focus may give rise to a gradual, but extensive brain lesion, and by the time focal symptoms have developed the injury is past repair. Knowledge of the function of the cortical areas is increasing, but there remains much to be learned. Pressure in many locations give rise to no symptoms which we can translate and can only be localized when the lesion has become extensive enough to involve a known center, and then operation often proves fruitless. Such sequelae as dizziness, headache, neuralgia, epilepsy or even impairment of mentality follow too frequently severe injuries to the brain under any method of treatment, and doubtless always will do so. A certain percentage however, and not a small one, of the unfortunate outcomes can be avoided by early and prompt removal of their cause.

It does not lie within the domain of this paper to discuss the neurological localization of cerebral lesions, so the principal symptoms will only be mentioned, not elaborated upon. Unconsciousness, projectile vomiting, variation in the size and action of one or both pupils, the choked disk, the slow, full pulse, showing the attempt of the heart to overcome anaemia of the brain, the disturbance in breathing, perhaps stertorous or sinking into the Cheyne-Stoeks type as the respiratory centers become exhausted, are all symptoms of compression.

Among those more suggestive of fracture are: Bleeding from the orifices, the nose, the mouth and, of the greatest importance in our experience, from the ear. The latter is possible without a fracture of the petrous portion of the temporal bone, but if there is no local lesion and it is profuse or persistent, a break is almost certainly present. It is more difficult to exclude an injury of the nose, but when possible haemorrhage from it, with or without spitting or vomiting of blood, requires careful consideration. Exophthalmos or ecchymoses of the eyelids or conjunctiva, especially appearing some hours after the injury, very frequently accompany fracture of the orbital plate, and similar discolorations of the skin about the mastoid process suggests very strongly fracture of the base of the middle fossa. Of course, contusions of the parts must be excluded.

Paralysis from pressure upon or destruction of cortical centers or cranial nerves may originate from a number of conditions, but

a fracture should be eliminated before deciding upon further treatment.

The facial is the cranial nerve most frequently involved, and injury of the auditory usually accompanies it, next the abducens followed by the motor-oculi or olfactory. Under the circumstances, deafness or loss of smell may be impossible to demonstrate, but loss of power in the others can be easily noted. It is possible for any of the nerves to be affected and the combination of several is not unusual, the commonest groupings are: the sixth, seventh and eighth; the third and fifth; and, occasionally, the ninth, tenth and eleventh. The symptoms of lesions of the cortical motor areas are too well known to require deliberation.

There is one absolute method of diagnosis and that is visual examination of the skull. In compound fractures a glance or the enlarging of the scalp wound will reveal the condition of the bone, but an exploratory incision will be required when no laceration is present. Under proper aseptic conditions we believe there are two simple fractures which should always be made compound, those of the patella and the skull. The consensus of opinion is universal in regard to the former and the results are excellent, and it is not logical to lay such stress upon the danger of infection in the latter, for a contused and lacerated knee joint is more susceptible to the action of pathogenic bacteria than is the dura. Therefore, we believe that when a fracture is suspected, from the history, the local injury, or neurological findings, an incision through the scalp should decide the diagnosis.

In considering the treatment we touch upon ground which is the seat of contention. There is now little question but that all depressed fragments of bone, clots or other foreign bodies should, when recognized, be removed, and any bleeding be controlled. In many cases this can readily be accomplished, but in fissured fractures, such conditions are difficult to diagnose. Even the short series of cases presented in this article has shown the frequency of such complications and demonstrated the value of our custom to trephine every fissured fracture and examine the condition of the inner table and the dura. In competent hands a trephining is not a dangerous operation, the brain does not suffer from the loss

of a small part of its bony covering, but, on the other hand, much suffering or even death may be prevented.

When basal fracture can be reached trephining is indicated to provide drainage and possibly help to asepticize the wound. The dura is closely attached to the skull in this part and is usually torn when the bone is broken, so removal or control of the sub-cortical hemorrhage is urgently demanded.

The value of decompression to relieve intra-cranial tension in a basal fracture which cannot be localized is receiving considerable study, but its value remains to be proved. The reports from the majority of surgeons have not been enthusiastic, and in a number of our own cases little or no result was obtained from the operation. When performed, the trephine opening is best made under the temple muscle, for the majority of fractures of the base involve the middle fossa, and if indications are discovered the opening is easily enlarged in the thin bone of this neighborhood and satisfactory drainage obtained.

The after treatment deserves more prominence than is usually accorded it and plays a very pronounced role in the immediate and later results. Elimination is the most important element, and this should take place through the bowels, skin and kidneys. A serous meningitis may develop from no other cause than a disturbance of the gastro-intestinal tract, and obstinate constipation is characteristic of head injuries. If not relieved this will prevent or interfere with recovery, and aid in the formation of adhesions of the meninges with a later train of symptoms. Our practice is to give a strong purge as soon as the patient recovers sufficiently from the anaesthetic, and repeat as often as necessary, the condition of the tongue is the best index. The kidneys and skin can be washed out with water by the mouth or by saline in the rectum or under the skin. In severe cases a pint of hypodermoclysis two or three times a day for the first week will yield gratifying results. With restlessness morphia is indicated, though sometime ineffective, and purging will overcome its constipating effect.

Rest in bed for two to three weeks to allow a fair union of the fracture should be insisted upon. While the motion between the fragments is limited in the cranium, still the jar of walking about

must have some effect, particularly at the base, and here the closely adherent dura is frequently lacerated.

The danger from anything which will cause a congestion of the brain, such as excitement, alcohol and early return to work is common to all brain affections and should be impressed upon the patient. The length of the convalescent period should be guaged by the mental faculties called into play by the occupation, but during it the patient's mind should be kept occupied with lighter duties to prevent the supervening of a neurosis.

In conclusion: In the fourteen cases reported we have been able to show the frequency of an intra-cranial lesion complicating a fracture of the skull, and the danger of overlooking such a fracture, if the history, the external lesions and the neurological symptoms are not given careful consideration. The last are the most exact, but when absent a good rule is to look at the bone under every severe contusion.

All foreign bodies pressing in or upon the the brain should be removed. As it is impossible to tell the damage of the inner plate in a linear fracture, the skull should always be trephined and an examination of the deeper layer of bone and the dura carried out.

DISCUSSION.

DR. G. W. HARTMAN: Trephining in common with strangulated hernia operations, radical interference, is mandatory. I recall a case that was undertaken very soon after I left college. In fact, because of my youthful appearance and my colleague's youthful appearance, we were at first denied the opportunity of operating; but we insisted that we knew what to do, and how to do it. The case outlined very few symptoms: contusion over the right supra-orbital region, over the left mastoid region, and a slight depression was found. Upon exploration we found a compressed fracture; and on trephining and removing pieces of the bone, we found that the mastoid cells were practically unchanged. The child made a rapid recovery. The facilities were practically none. It was a dirty kitchen in which we had to operate; but the point is, that under such circumstances operation is essential, if we wish to avoid future troubles for our case and practically avoid fatality.

The second point is outlined, I think, in the case where the

traumatism was so severe that little work could be done at the time. Within six months I saw an operation by a surgeon (a homœopathist) in which two hours were spent over a fracture produced by the throwing of a brick against the skull and practically the whole left side caved in. The pieces were searched for and removed under profound anesthesia. While radical operations are often necessary, prolonged operations are not always indicated.

DR. R. V. WHITE: A youth, a child in fact—"George B., aged 9"—was sent to the hospital about a month or six weeks ago with a history of having been struck by a trolley car. When he was brought in he was decidedly collapsic; he presented a contusion of the right side, right parietal region; bleeding from the right ear, and bleeding from the nose—was vomiting blood. Owing to his collapsic condition we decided to wait until a more opportune time to operate; and I saw him (this was at noon)—I saw him at 8 o'clock that evening; he was improving nicely; his father at that time refused to give his consent to have him operated, but later in the evening said that we might operate the following morning, if his condition was not improved; so, being very well satisfied that he could not improve, we ordered the operating room prepared for nine o'clock and asked the resident to telephone us as to his condition. At half-past seven we learned he had awakened from his stupor, and was comparatively free from all symptoms. I saw him at ten o'clock and he had again fallen into his stupor and we could not rouse him. Talked to the father; and the father said no use; the child was improved once and he would improve again; he was satisfied he would get well without operation. It went on until Monday again; Sunday night he had again recovered from his stupor and we were very much chagrined. They were all satisfied that he would get well. However, on Monday morning his condition was so bad that we really felt as though we did not care whether we operated or not, but then the family wanted us to operate; and we found a fissured fracture which extended down to the fossa at the base; and we were satisfied that our diagnosis was a correct one. We found blood oozing through the fissure; and we quickly trephined and turned out a very large clot. We enlarged the opening and found that the bleeding was not either from the anterior nor the

posterior branches of the middle meningeal, but seemed to be coming from below. We packed; and as soon as we packed, his pulse became very bad again; we removed our pack and the blood kept oozing right up then, and we were satisfied that his condition was decidedly precarious; and we ligated the right cartoid artery and the blood all stopped, the oozing stopped; and the young man became very much improved; and yet we were satisfied he gave a very doubtful prognosis. The next morning at the changing of the special nurses, the young man got up and walked to the bathroom; came back and crawled into bed; and in the end of a week he had improved sufficiently to sit up; and he was discharged at the end of eleven days.

DR. J. D. ELLIOTT: I do not think there is anything more to be said; except that the principal points I wanted to bring out were the importance of exploring to see where the fracture lies; and then, if a fissured fracture exists, although only a fissured fracture, to look what is beneath it, and I think a great many lives can be saved that way.

THE MODERN SURGICAL TREATMENT OF KNEE-JOINT DISEASES.

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Recent advances in surgery of the knee-joint have prompted me to make this my subject. It has not been many years ago that an operation upon this, the largest joint, was considered with a great deal of anxiety, because of the danger of infection and the liability of a stiff joint resulting.

With the advantages of asepsis, improved technique, and a better understanding of the tolerance of the synovial membrane, operations are now undertaken more promptly; with the result that the function of the joint is more often preserved, a deformed limb prevented and sometimes an amputation averted.

In 1890 Phelps stated that ankylosis was the result of intra-articular inflammation rather than long-continued immobilization; and while this is no doubt true in tuberculous joints where prolonged rest is often indicated, yet in the more active infectious dis-

eases of the joint better functional results are obtained by resting the joint, only during the very acute symptoms, and after these subside using active and passive movements very gently at first, together with such measures as massage, Bier's hyperæmia and heat to control the inflammation.

In some forms of tuberculosis of the knee-joint early operations are now carried out with good results, this is particularly so in primary synovial tuberculosis described by Konig as hydrops articulorum tuberculosum. The early changes in this form are very slight, the synovial membrane is very little altered. At this time the joint can be opened, washed out with normal salt solution, dusted with iodoform powder and the wound closed with the prospect of healing and good functional results.

When the tubercular process starts in the adjacent bones as it more frequently does, it may, under appropriate conservative treatment, be arrested with the formation of cicatricial tissue; or, it may form a bone abscess and open externally; or, what is most often the result, it may rupture into the joint. When the joint is invaded suddenly in this way, the earlier it is opened the better are chances of its recovery with function, for at first the whole synovial membrane is not affected, as a simple sero-fibrinous exudate into the joint precedes the rupture and tends to limit the spread of the tubercular products.

In the adult when the focus is confined to a small area of bone it is sometimes possible to localize it by means of the X-rays and cut short the course of the disease by a clean excision. The wound should be dusted with iodoform powder or wiped out with Harrington's solution and closed. The limb must be immobilized until firm cicatrization has taken place.

When the joint is extensively involved in the adult, and a stiff joint is inevitable it is well to proceed to a complete resection; especially in that class of patients who cannot afford the long course entailed by conservative treatment, and who cannot carry out the proper regimen of diet, hygiene, and change of climate.

When recovery takes place from conservative treatment there is a strong tendency toward flexion deformity, which is hard to overcome; for this reason partial operations are not satisfactory as

there is not only the danger of a relapse, but also the possibility of a resultant flexure.

In the operation of complete resection all the diseased tissue must be removed, the synovial pouches dissected out, and the deep foci in the bone excised with the chisel or heavy sharp knife. Firm bony ankylosis is the ultimate object and can be brought about by good coaptation of the ends of bones kept in place by kangaroo tendon sutures or wire. The limb should be immobilized at once by plaster, later a well-fitting brace can be applied and must be worn for a year at least, as a bony union takes place slowly in these cases and anything short of complete ankylosis will be followed by pain and a tendency toward flexion necessitating the wearing of a brace indefinitely.

In the young when conservative measures fail, simple erosion of the joint, sparing as much as possible gives the best results. We may expect in some cases, even though the joint be opened, to obtain good functional results. I recall the case of a girl seven years of age who had a tubercular caries of the upper end of the tibia involving the articular surface. The joint was opened, the necrotic material removed and the wound partially closed, leaving a rubber drain at the inner angle. The cavity filled in with granulation tissue, cicatrization followed; and complete function of the joint was obtained. Simple traumatic arthritis should yield to rest and heat. We should be on our guard, however, to note at the earliest moment any change that might indicate the beginning of tuberculosis. There may be a sub-acute form of traumatic arthritis of the knee joint produced by repeated irritation in consequence of a deformity, such as flat-foot. The knee-joint bears the brunt in these cases of the jar in walking. The inflammation usually subsides when the deformity is corrected.

In infectious arthritis we should search for the source, whether from a wound, gonorrhœa, lung diseases, infectious fevers, or through the tonsil or naso-pharynx. The commonest form is the gonorrhœal, the one responsible for too many stiff joints. We should be able, by early and proper treatment, to prevent many of these useless joints.

No one method can be used. When there is much effusion into the joint some of the fluid should be aspirated and examined for

gonococci, if none is found the inflammation is due to the irritations of toxins. These cases do well under simple aspiration, supplemented by Bier's hyperemia, massage and active and passive motion just as soon as the very acute symptoms subside. When the gonococci are found in the aspirated fluid, the joint should at once be opened and irrigated, the wound partially closed and drained by a rubber tube; active and passive motions should be started early.

In some cases there may be little or no effusion into the joint, but the periarticular structures are inflamed and swollen. I recently treated a case of this variety by Bier's hypermia. The knee was swollen, tender and flexed. The elastic bandage was applied well up on the thigh and allowed to remain four hours at a time with an interval of two hours' rest during the day and night. The pain quickly disappeared, and the swelling gradually subsided. Active and passive motions were early started and continued until complete function was obtained. No immobilization was carried out, the patient was up and about on crutches and was encouraged to flex and extend the leg as much as possible. The crutches were used until the acute symptoms had well subsided when she gradually began to bear weight upon the joint; and ultimately entirely recovered. In the meantime she was treated for the primary gonorrhœa.

The villous form of arthritis when it shows no tendency to undergo absorption should be treated by dissecting out the villous growths.

Anti-gonorrhœal serum should be of value in the treatment of these cases and no doubt will be when its application is more general.

Acute suppurative arthritis must be treated actively. It is either caused by a wound or secondary to some infection. When the streptococci or staphylococci are present, and there is no wound, the arthritis is often secondary to an osteomyelitis which should be found and treated.

The joint in acute suppurative arthritis, if opened early in the course of the disease, should be washed out with 1-1,000 bichloride, followed by normal salt solution. It can then be partially closed, with rubber drains in each angle of the wound. The incision may

be the one used for typical resection or a transverse one across the patella from condyle to condyle. The patella must be sawn through and the joint freely opened. By forced flexion every crevice of the joint can be exposed and thoroughly irrigated.

In cases in which operation has been delayed and destructive changes have taken place Allen's method of thoroughly washing out the joint and packing it with iodoform gauze can be followed. I have a preference in these cases to wipe out the joint with Harrington's solution as advised by Summers and then pack it with iodoform gauze.

When a stiff joint has resulted with deformity the operative treatment consists of making an effort under anesthesia to straighten it and if possible by massage, active and passive motions obtain some function. When this is not possible division of posterior tendons and fascia may be necessary. When complete ankylosis has occurred some success has been attained by dividing the joint and interposing a flap of muscle. Murphy, by this method, was able to obtain 15 degrees of motion in a joint that had been absolutely fixed.

In an effort to obtain a movable joint in a knee-joint ankylosed at right angles, Lexer transplanted an entire knee-joint from a freshly amputated limb. Good union resulted with function of the joint; active motion which was less than passive was improved by muscle transplantation.

In conclusion, I would like to say that in operations upon the knee-joint strict asepsis should rule. That if this can be assured we need not hesitate to open the joint or repair a fracture of the patella, to remove foreign bodies, hypertrophied fringes or joint mice, or to excise a troublesome dislocated cartilage. The sepsis and immobilization of the joint mean ankylosis. That when operation is indicated it should be carried out promptly.

THE SURGEON, PATIENT AND ANÆSTHETIST.

ARTHUR HARTLEY, M. D., PHILADELPHIA.

In writing upon this subject it is to be hoped that in the discussion which may follow ideas will be brought to the attention of the profession in such a manner as to create a more ethical relationship therein.

The surgeon is called in consultation with the general practitioner and his attitude is one of advisor in a suspected surgical condition. While called and selected by the practitioner or family, his services are frequently not properly estimated nor remunerated by the family. The practitioner should acquaint the family with the idea of the surgeon's worth and educate them to the paying of adequate fees both in consultation and in operation.

The practitioner, and I say this with regret, at times fixes the fee of the operator and then charges the family a larger fee, appropriating to himself the difference. This is unjust to the surgeon and to the family. The surgeon should treat with the family in payment of the fee.

A condition sometimes met by the surgeon is a request upon the part of the practitioner that the fee be divided, giving part to the practitioner.

This situation has been under discussion by other medical societies with the result that it has been strongly condemned.

The practitioner does the patient and surgeon an injustice by sending a patient to the wards of hospitals to be operated free of charge when he or she is well able to pay a fee for operation.

The charging of a fee for having patients operated, collecting the same and then sending the patient into the wards of the hospital to be operated free of charge, is a gross injustice to all concerned.

The question of fees by the surgeon is, of course, a personal matter and adjustable to the circumstances of the patient and family, but he should arrange with the family.

The surgeon in fixing his fee should not be called upon to pay the anæsthetist. The anæsthetist should send his bill independ-

ently of the operator. He is called in because of his knowledge of the specialty of giving anæsthetics. This has been pointed out in a paper before the Delaware County Homœopathic Medical Society of Pennsylvania, printed in The Hahnemannian Monthly, August, 1909.

The specialist in diagnosis of internal medicine who may be called in prior to or along with the surgeon is not paid by the surgeon. Allow me to make a plea for the anæsthetist because of the frequently inadequate fee given the man who assumes the responsibility of the patient's life at the time of the operation.

More men are required, who make anæsthesia and anæsthetics a specialty, to safeguard the patient and to insure the surgeon of a more perfect result.

But the difficulty has been that the anæsthetist's fee has been so small that men will not specialize in this branch of surgery.

Dr. T. D. Buchanan, of New York City, in his paper upon "The Relation of the Anæsthetist to the Surgeon," read before the Surgical and Gynecological Society of the American Institute of Homœopathy, at Atlantic City, N. J., September, 1906, in relation to the anæsthetist's fee said: "The question of fees is one easily adjusted and can be discussed from a personal standpoint. The fees must necessarily be based upon a sliding scale the same as a surgeon's. In New York City and surrounding towns many surgeons adjust the fee upon a basis of ten per cent. of their own. Many times it would be inexpedient to charge this much, but this is generally averaged up by charging more than ten per cent. in others.

"Each party should send his own bill. This gives the anæsthetist more individuality, but in some cases the best interests of both parties are preserved by allowing the surgeon full control.

"Theoretically the anæsthetist should make his own arrangements with the patient, but practically it works out more satisfactorily to let the surgeon complete the arrangements. The anæsthetist assumes the responsibility of collecting his fee unless an agreement is made to the contrary.

"When a surgeon employs an anæsthetist in many charity

cases or for small fees he is in duty bound to send him some of the better paying ones."

The attitude of the surgeon to the patient is one of the relief of suffering and distress and he is capable of raising or dashing from the patient hope and courage, which psychologically is often a potent factor in the process of recovery.

The anæsthetist has a large field and just here in the reassurance of his patient, at the beginning, he will aid much in the favorable after result of an operation.

This psychological factor should always be kept in mind, and an attempt should be made to stimulate all the efforts of the patient to a courageous fight for health and vigor.

Many patients die from a lack of courage by simply failing to fight off the tendency to give up. Others, through sheer force of will, aid directly in the recovery.

I have seen a number of patients who would have died had they lacked this will power, the condition being such that recovery seemed impossible.

Many patients who have gone to the operating table protesting they could not live have taken the anæsthetic badly, or have had most difficult recoveries, and in many instances a fatal result has followed, and this, too, after rather trifling operations.

The administration of the anæsthetic is a delicate process and should not be entrusted to those who lack skill and experience.

Many patients die from the anæsthetic in the hands of the unskilled and inexperienced, sometimes at the time of operation, sometimes later.

The patient should be guarded against the unskilled anæsthetist as much as against the unskilled surgeon.

The crying demand in recent years has been for men better trained in giving anæsthetics.

The only way in which such men can be secured is by recognizing the need of better fees for the anæsthetist.

I quote from an article, "The Nurse as an Anæsthetist," by J. M. Baldy, M. D., of the Gynecean Hospital of Philadelphia, published in the International Hospital Record, August 15, 1900:

"It seems inconceivable that for so long a time the most important position in the operating room aside from that of he surgeon

himself should have been relegated to the hands of the most incompetent." (Referring to the Junior Resident Physician.)

He goes on to say: "If the profession has at last awakened to the true situation, it remains for us but to develop a proper system and to provide the ways and means. The ways and means is the keynote to the whole situation, and could this question be successfully solved the result would be immediate and gratifying.

Like most practical subjects in this world, the solution of this subject will most probably be a compromise with the Theoretically Perfect, on the one hand, and the Possibilities of the situation, on the other. The perfect solution, of course, would be a medical man of high grade of intelligence, with a well grounded medical and surgical education, a special education in anæsthetics, supplemented by a natural inclination in this direction as against any other.

Are the attractions of anæsthesia sufficient to overcome the disadvantages of the scientific narrowness and lack of opportunity for distinction and income to hold a sufficient number of men of this type or even of great worth in this field? The answer seems apparent.

Possibly the future may increase the number, but at present they are so scarce as to be readily counted. The great city of Philadelphia does not to my knowledge contain one.

Again, is it necessary that a successful anæsthetist should of necessity be of the above standard of education? A broad education and knowledge is always useful, but there comes a point beyond which it is necessary often to advance to establish a high grade of workmanship. In the development of the future anæsthetist there will no doubt be many lines followed by many men with a considerable number of successes according to surroundings and opportunities. In other words, in all probability no one source of supply will be found to meet all requirements, but a number of means will be worked out to successfully accomplish the ends in view.

Personally, my own inclinations, governed largely by the means at hand by past experience, lies in the direction of women —the trained nurse.

The education of the trained nurse lies largely on medical and surgical lines, and she has, therefore (unless we except the woman physician), a sounder basis than have other women on which to begin. In the case of woman physicians I can readily see that some would and will be available for the service, but in most instances many of the most serious objections obtain in their case as do in the case of men physicians. * * * * *

Every physician obtains his medical education with the idea of practicing medicine, and it is only dire necessity which will compel him to give up such a future for the narrow one of anæsthesia. Every physician who for a few years of his early and least busy life devotes a part of his time to anæsthesia does so with the distinct idea of observing and learning surgery, with the result that he is shortly paying more attention to the technic of the operation than he is to the anæsthetic, and within a year or so he is demanding an assistantship from the surgeon as a reward for his faithful service in what he considers a subordinate position and which he has all along filled under mental protest and only as a means to an end.

To the nurse anæsthesia will prove a stepping stone to something better than she had originally chosen—a higher and more dignified position—and will appeal in its own way to her ambition and pride just as the superintendency of a training school does. The field will prove interesting, and my experience has shown me it will, with the right kind of choice, stimulate her to an effort to improve and perfect herself and to an earnest study of the whole matter in hand.

In this way will be elminated the inattention to the anæsthetic with its attendant annoyances and dangers—there being no desire for, or chance of, an assistantship or a future chiefship. In this way may be secured an absolutely sure method of always having the anæsthetist on hand as she lives in the institution and is ready for any emergency.

In this way may the all-important question of ways and means be successfully solved, it being within the power of most institutions to offer a remuneration of sufficient size to make the position attractive. * * * *

The Gynecean Hospital of Philadelphia has now had a gradu-

ate nurse in charge of anæsthesia (independent of all aid) for a year. * * * *

We note in a recent report of St. Mary's Hospital, Rochester, Minnesota, that the Mayo Clinic has four official anæsthetists—all women. It was in this clinic we were first impressed with the capacity of a woman in this position." (Dr. Baldy I have quoted at length.)

I am told that at the University of Pennsylvania a *nurse* is paid $60 a month and expenses to administer anæsthetics to the general hospital cases for operation.

Naturally, *I* do *not* agree with Dr. Baldy in relegating anæsthesia to the nurse, but the quotation brings out forcibly the difficulty of securing competent men and one of the reasons for it.

The problem of protecting the patient and the surgeon in the giving of anæsthetics is a serious one and demands the attention and co-operation of the entire profession.

The skilled anæsthetist is able to control the patient with the minimum amount of the anæsthetic. He overcomes the shock of operation psychologically and by the use of the stimulating effect of the anæsthetic, avoiding the depressing and paralyzing effect upon the vital nervous centers.

I have in mind a patient who was under the anæsthetic for three and a half hours, seven ounces of ether being used, and when returned to bed had a natural temperature, pulse and respiration, and reacted without nausea. The recovery was uneventful following a panhysterrectomy with innumerable adhesions. I may add that in this case the intestines were not handled much nor seen during the operation.

In another case, the removal of a pedunculated fibroid and a ventral suspension, the patient very anaemic, required but ¾ oz. of ether to anæsthetize and 1 oz. to continue etherization for twenty-five minutes. Uneventful recovery followed.

Another case: A woman 85 years of age, anæsthetized for the removal of gall stones. Four ounces of ether was used. The patient made an uneventful recovery.

Still another case: A woman 104 years old, badly burned, was anæsthetized; 1½ oz. of ether, anæsthesia was continued with

¾ oz. of ether, while a skin grafting was done. This patient also made an uneventful recovery, and was later sent to the Philadelphia Hospital because she no longer had home or money.

Case after case could be cited where the patients have had little or no deleterious after effects due to the care in the administration of the anæsthetic.

In conclusion allow me to urge:

(1) That the practitioner educate his patients to the knowledge of the worth of the surgeon.

(2) That the surgeon and practitioner educate the families to paying the anæsthetist's fees.

(3) That the anæsthetist be paid fees adequate to the responsibility assumed, thus encouraging more and better men to enter the field.

(4) That the surgeon safeguard the patient and himself by consultation with skilled anæsthetists.

(5) That each community have its skilled anæsthetist.

(6) That the nurse as an anæsthetist be discouraged.

(7) That the ethical relationship between practitioner, patient and surgeon be adhered to.

DISCUSSION.

DR. A. R. GARNER: The subject of the anæsthetist is about as important as is that of the surgeon. I think one or two of the anæsthetists at the Hahnemann hospital will bear me out. I am always desirous of knowing what anæsthetist I can have for any operation. It does not take long to decide which men you feel like trusting with your own family, or with patients. As a rule, the general practitioner makes a poor anæsthetist.

DR. ARTHUR HARTLEY: Every community should have some one man on whom they can depend for doing anæsthetic work more than any one else. Unless a man has had a wide experience there are a number of complications which the average man is unable to deal with; it is like at the crossroads when you drive out into the country and come into a section where there is only the family physician around and he starts in to give the anæsthetic as they sometimes do, 4 ounces of ether and 4 ounces of chloroform, and puts it over the patient's face and the patient

goes down and out; the surgeon has to jump in and resuscitate the patient. Some one man should be selected who will do that sort of work.

DR. R. W. McCLELLAND: I think the greatest number of offenders in this branch are those physicians who were performing that very little operation for circumcision. They just reach up with one hand and hold the handkerchief over the child's face while they do the operation. I have operated on 4 children in that way in one afternoon; and I know of one case where my brother told me about a very good friend of his. He was operating on a little child of a very prominent attorney, and he got the father to give the anæsthetic; he started it and the father was very anxious the child should not suffer any pain and so he plied that child pretty thoroughly with anæsthetic. He began to notice the child's blood had stopped—he looked up and saw the child was not breathing; and he spent two of the worst hours in his life to bring that child back. He said never again for him.

KLEPTOMANIA.

H. L. NORTHROP, M. D., PHILADELPHIA.

Nearly a year ago I had the honor to present a paper to the Interstate Homœopathic Society, whose meeting was held in Scranton. My subject was "Trephining for Moral Degeneracy." Because of the favorable impression which that subject made, and the attention which it received, I am encouraged to invade this same territory today with a paper on a sister topic; at the same time I must tell you that my paper of a year ago also received adverse criticism at the hands of some, while one editor rather facetiously and at considerable length referred to my conclusions and results as imaginary and far-fetched. My paper pleased the phrenologists, of course. It was reprinted in their journals and accepted by them as evidence substantiating their claims and carrying out their views in regard to the cerebral localization of mental functions, characteristics, disposition, etc., both normal and abnormal and moral and immoral. And why not? Turn about is fair play, and if phrenology helps the surgeon to locate and to

cure mental disease, and thereby to lessen crime and immorality, (as it certainly does) then let surgery acknowledge this debt and give proper credit to phrenology. Many cases are now reported upon recognized authority which clearly show the dependence of the operative success upon accepted phrenological data. This is a subject to which the brain surgeon should give his best time and thought.

Kleptomania is common; the world is full of theft and thieves. A desire to acquire is natural to every one, if the object of it be for self-protection, self-preservation and comfort, and the methods employed be honorable, and if they respect the rights and ownership of others, this desire to acquire may be looked upon as a natural and a rational instinct. On the other hand, kleptomania implies a lack of control over this instinct, a morbid state of the mind with an absence of controlling motives. This desire to acquire, this instinct, is conspicuous in the animal, which, however, (unless trained) lacks all control over it. But in man the intellect and the will exercise more or less supervision over the love of possession. Thus what is natural to the animal is also perfectly natural to man, but if the latter enjoy his full mental faculties, then his innate desire to possess is restrained beyond a right and reasonable degree, and he does not steal. All of which is along the line of harmony between the several mental functions, and which means the same to the mind that harmony of function means to the body; viz. health.

Gall, a world-wide authority on phrenology and discoverer of many facts relating to the anatomy and physiology of the nervous system, years ago observed, on his visits to asylums and prisons, that men given to stealing presented a very prominent anterior temporal region, while Gall, Hollander and others reported many cases of kleptomania, in all of which a pathological lesion involving the anterior part of the temporal lobe on one or the other side, (usually the left) existed, and was demonstrated either ante or post-mortem. This lesion was perhaps in the nature of a bulging of the parieto-temporal region, due to an irregularity in the contour of the temporal and parietal bones, or was a cortical cyst in the temporal lobe, possibly with other changes such as softening and degeneration of the surrounding brain tissue, hemorrhagic effu-

sions, adhesions, etc. This temporo-sphenoidal lesion and kleptomania appeared to bear a relationship to each other, so direct and positive as to lead Hollander to conclude that "the temporo-sphenoidal lobes are in some way connected with the propensities common to man and the lower animals," while kleptomania and voracious hunger and thirst, he has demonstrated, are faculties associated with the anterior part of these temporo-sphenoidal lobes.

The case of kleptomania which I take pleasure in reporting, will illustrate the benefit that at least some of those afflicted with a mania to steal may obtain from surgical procedures. I saw Margaret G. in November, 1908, for the first time. She was then 13 years old, and, like her brothers and sisters, was backward in school and mentally dull. Because of a most persistent and aggravated habit of stealing everything and anything that she could lay her hands on, she was expelled from school as a moral degenerate. She was then referred to me and I obtained the following history: When fifteen months old, while her mother was confined to bed by a serious illness, she fell from a child's high chair and struck on the corner and leg of a stove, receiving a dislocation of the left shoulder and a head injury also on the left side. The exact character and extent of this head injury I could not learn. Nothing of importance or interest occurred during her childhood until she was ten years of age, when her kleptomaniac tendencies became manifest. She stole her mother's glasses and hid them; she stole her grandfather's pocket knife and threw it over the fence into the adjoining yard; whenever she got hold of a piece of money she would hide it for awhile and then spend it. (Kleptomaniacs usually hide and hoard their stolen goods.) When sent to a store on an errand she would pick up all kinds of articles—anything lying upon a counter, and if not caught in the act (and she seldom was) would secrete the stolen thing in her room. In school she stole from the girls and boys and teachers, and the habit became so aggravated and obnoxious that, as I have already stated, she was forced to leave school. When scolded for her theft, she would always drop her eyes, then glance up and smile and say, "I could not help it, I had to take them." (A characteristic statement of a kleptomaniac.) Whenever walking or standing, she would hold her hands together, the right hand clasped and covered by the left.

An examination of her head showed a slight, but perceptible fullness above and in front of the left ear. After her hair had been removed and her head shaved, this localized fullness showed plainly. Believing this case to be one of kleptomania resulting from pathological changes in the anterior part of the left temporal lobe, this lesion in turn being due to the head injury received in childhood, I advised surgical treatment. Before operating I sought the advice of Drs. Bayley and Hicks, at that time visiting neurologists to Hahnemann hospital, who corroborated my diagnosis and sanctioned my proposed plan of treatment. On November 30th, 1908, I opened Margaret's skull in the left anterior temporal region, making a U-shaped flap, base downward, of the scalp tissues and temporal muscle. This exposed a very irregular temporal fossa, deeply indented in front where the squamous part of the temporal bone sutures with the greater wing of the sphenoid. This acute depression lay directly over the anterior extremity of the temporal lobe of the brain, while just back of it the squamous bone bulged outwardly and which was the cause of the fullness observed before operation. I next removed the floor of the temporal fossa over an area two inches antero-posteriorly by one and one-half inches vertically, including the entire segment of depressed bone. I incised the dura around the margin of this bony aperture and gave escape to more than the usual quantity of cerebro-spinal fluid. Adhesions were found between the three meninges covering the apex of the temporal lobe. These I destroyed with a dural separator. I did not disturb the cortex; it appeared dull and soft (flabby.) The dural flap was next sutured in position and the rest of the wound closed in the ordinary way. Perfect wounding healing followed and Margaret recovered nicely. When first permitted to be out of bed she began to play her old kleptomaniac tricks, and one of the nurses reported that she had stolen several articles from the supply closet. No attention was paid to this, however, and the child did not repeat it during the remainder of her stay in the hospital, nor has she stolen a thing since, to the knowledge of parents or teachers. To be sure, it is only ten months since the operation upon this child's head, but inasmuch as she has not fallen from grace up to this date, and shows not the slightest inclination to do so, I believe she is permanently cured.

DISCUSSION.

DR. C. D. FOX: Probably the majority of cases of kleptomania are due to a functional neurosis termed cytasthenia. In these cases the stealing is the result of an impulsion which is of the same nature as a tic or spasm. The patient, perhaps, is given to shrugging his shoulders this way (indicating); he feels that he has to do it; the kleptomaniac feels that he has to steal things, not because he wants them or because he can make use of them, but because he has to do it.

DR. H. L. NORTHROP: Dr. Fox made a good point when he said that so many of these cases are inoperable, and that no success can be expected in surgical treatment. We must individualize and select. Some cases are entirely hopeless. I have refused to operate on one or two which I deemed entirely inoperable; and a number of successful cases have been reported; I have not referred to them because I wished to make my paper an entirely individual one, as far as possible. This child on whom I operated —now, while she does not steal anything or steal money, when she gets hold of a present—a present is presented to her—she thinks a great deal of it; and when she gets hold of money she keeps it and is saving of it, and has already started quite a bank account.

DR. D. P. MADDUX: Would you give us the indications a little more clearly upon which a case is accepted or rejected for operative surgery?

DR. H. L. NORTHROP: Those who do general surgery (and included in that, of course, is brain surgery, or those who make more or less of a specialty of brain surgery) always look—when brought face to face with a surgical case, or brain case for surgical operation—for a history of traumatism; and we regard a history of that as being of exceptional value, and as at least indicating operation; and those cases which I have read about of kleptomania and of moral degeneracy in general, no matter in what phase it is manifested, have had a history of previous injury. It is in such cases that a positive traumatism has occurred and has produced the lesion which in turn has resulted in the disturbance of the mental function and the lack of correlation between the mental func-

tions; in other words, ill-health of the brain. It is in those cases, particularly, that surgery is successful and is advised.

I have operated during the past year upon cases of moral degeneracy and without any permanent success so far. There has been a relapse. Some day when more material is at hand, and when the final results can be better counted upon, I hope to report those cases as well.

THE SURGERY OF THE PLEURAL CAVITY.

DESIDERIO ROMAN, A. M., M. D., PHILADELPHIA.

The selection of a subject for a paper for the Bureau of Surgery of the State Society, at its meeting in Scranton, deserved, in my judgment, as much consideration as the subject chosen most naturally would.

So long as the meetings of our bureau are attended almost entirely by general practitioners, the specialist should consider himself on an occasion of this kind, as being virtually their guest, and should seek to entertain his hearers on subjects congenial to their lines of thought, to their own experiences, and to their wants. I have weighed most carefully whether to bring to your attention our latest improvements upon old methods, our experimental and research work on new lines in the field of general surgery, or whether to draw your attention to carefully tabulated and long statistical reports in the same manner that we have been doing in the past fifteen or twenty years, in the stereotyped style in which we have been wont to present papers in the past; starting with apologies, following with quotations and statistics, and ending with conclusions and bibliography, or should I retail to you the many consecutive abdominal sections without mortality in my own experience, or hold you in astonishment over some special work of a technical character, such as experiments in visceral transplantation suture of blood vessels; the theory of the Parathyroids, the philosophy of Bier's treatment, the passive hyperemia, or discuss with you the blessings of the "Murphy treatment" and the "Fowler position" which have so greatly assisted us in checking the old and dreaded foe, "Peritoneal Toxemia." Somehow or other I have

felt on this occasion much disinclined to take your time with subjects and material which I sincerely believe belong strictly to a surgical society.

The surgery of the pleural cavity is a subject that can well be covered and dismissed in two words—early recognition and prompt action. It is precisely around these words that the subject of my paper must develop. There is probably no better example in the entire field of clinical medicine in which the relationship between general medicine and general surgery is more dignified and unique than in the lesions of the pleural cavity, requiring surgical intervention. At no time is the general surgeon more in his own sphere, and qualified by his traditional glories than when he stands by the general practitioner in full possession of his general scientific equipment, percussing and auscultating in thorough accord with (our brother) the internist, and deciding with surgical assurance that that chest must be opened. I speak rather feelingly of this relationship, because in these days of surgical specialism the general practitioner is inclined to forget that the general surgeon is not the special faddist of commercialism, but that a surgeon is a doctor and a surgeon too. The greatest of surgeons of modern times, the father of surgical pathology, Billroth, emphatically taught his students at the beginning of his lecture course, that to become a surgeon meant a long road of medical and surgical experience—a military-like career, winning honors, as they win battles.

Our brother practitioners have become proficient in later years in the early recognition of danger signs. Appendicitis, pelvic suppuration, gall-bladder disease, ectopic gestation, etc., are recognized earlier and combatted more promptly than they were ten or fifteen years ago. Experience has been so vast along these lines that they, as subjects for discussion, are worn threadbare. Strange as it may seem, I have observed for several years that there is less apprehension in the minds of physicians as to the course and complications of pleurisy and pleuro-pneumonia than there should be. Pleuro-pneumonia and pleurisy demand as careful observation, in regard to pathologic possibilities, as does salpingitis, appendicitis and other acute inflammatory processes, where we have the elements of bacterial infection and serous exudation. If we cease to regard the onset of pneumonic or pleuritic symptoms as merely the result of

exposure and individual indiscretions, and if we cease to treat with unwarranted optimism those early manifestations of pulmonary and pleural inflammation, but view them with scientific eye, remembering the essential etiology of inflammatory processes in these structures we will meet less often with pleural sacs that have contained large quantities of fetid pus for months and years. There is no doubt that greater care should be exercised in the treatment of cases where we recognize the existence of an inflammation in the lung and pleura by reason of the fact that these lesions tend to run a self-limiting course, of more or less short duration, so that a protracted convalescence, or an irregular course in any given case, should at once lead us to suspect and verify or eliminate the possibility of pleural effusion and its attending complications. I lay emphasis on the fact that pleural effusion will appear and develop to a considerable degree before gross or pathognomic signs reveal its presence, and that the weight of experience points to us the wisdom of looking out for such possibilities rather than to wait gross manifestations of the same. The surgery of the pleural cavity deals almost entirely with empyema and its attending complications, and less commonly with malignant growths. These two lesions can be said to encompass the entire field of surgical intervention in the pleural cavity. The frequency with which the general practitioner meets with cases of primary or secondary inflammations of the lung and pleura, or the pleura alone, and the many instances in which the inflammatory processes of the pleura advance to effusion and empyema demand a thorough comprehension of the pathologic picture of such cases. For practical value the general practitioner should be thoroughly conversant with the essential knowledge of the etiology, course and termination of pleurisy and pleuro-pneumonia. At the present time the general acceptation as to the cause of pleurisy regards the old and new theories with moderation, that is to say, we still admit of the constitutional disposition or individual susceptibility, and we appreciate the role played by micro-organisms, their products and toxins, but we also recognize the unreliability of any one factor in the causation, or any pathognomonic sign in the determination of pleural inflammation. As a matter of knowledge it is well to bear in mind the distinctive significance of this or that micro-organism in the pleural

exudates, and for the sake of scientific accuracy. On broad-minded premises it is admitted by clinical experience that bacteria and their products when present in pleural inflammations correlate etiologic possibilities, but their absence does not satisfy our minds sufficiently to guide our therapeutic measures or to speculate in prognosis. For while the presence of tubercle bacilli usually leads us to designate the process as obviously tubercular, the absence of this micro-organism does not prove conclusively that the pleuritis is non-tubercular. The ordinary bacteriological examinations either by culture media or by cover glass stainings yield negative results, so often that observers such as Klemperer and Netter look upon negative reports as strong evidence of their tubercular origin, in many instances proving this assertion by inoculation experiments to the extent that neither consider that upwards of 40 per cent. of all primary pleurtic exudates are tubercular, especially so in the serofibrinous type.

If we take into consideration the fact that in most pleurisies in which micro-organisms are found we are able to demonstrate either the presence of tubercle bacilli, or that of the diplococcus lanceolatus, or the streptococcus pyogemes, we can consider for all practical purposes that these constitute the most important if not the total bacteriological aspect of both primary and secondary pleurisies, for, while we recognize the mixed infections and all other possibilities of accession to the lung and its covering from the germ kingdom through the venous and the lymphatic channels, they are to be regarded rather as the scientific pleasures of our laboratory men than as of immediate value in practice.

The wealth of physical signs, characteristic symptomatology and our improved clinical methods prove worthless when we strive to single out pathognomonic distinctions. No where is there greater danger of error than in the interpretation of physical signs in the chest cavity unless we are familiar with the principles of pathology, and the peculiar tendency of such process when involving the thoracic viscera. The greater our experience the greater our scepticism in the generalization of physical signs and for this reason we find competent clinicians in the past two years championing the urgent need of reform in physical diagnosis; foremost among them Quimby, of New York. The present day effort to simplify former

methods and to individualize as a fundamental principle would seem to swing the pendulum the other way, starting a crusade against the reliability of the thorough systematic, but complicated methods of Laennec and Skoda.

Surgeons have done more to eliminate unreliable physical signs in the diagnosis of intra-thoracic conditions than other clinical observers, because of their opportunity to prove or disprove diagnostic conclusions; and whereas the time has come when we must cast aside an immense amount of erroneous principles, legacies of old teachings, we are nevertheless fully guaranteed in our faith in certain signs, which finer experience and individualization show us to be inseparable from the usual inflammations of the lung and pleura.

Whatever factor or factors usher in a primary or secondary pneumonia or pleurisy, simple or associated, the guiding principle is the course pursued by the pathological changes in their totality and duration, far more so than the predominance of one symptom or physical sign over another, that is to say, chill, temperature, character of pain, character of breathing, etc., may and often are accompanied by lesser pathologic gravity than certain pleural inflammations with effusion, which seem to simply retard convalescence, and are manifested by milder physical signs. This is especially true in chronic exudations, which I have often had opportunity to verify in my clinic, where I have operated upon as many as three cases of pyo-thorax in one afternoon, and where I demonstrated that physical signs looked upon as diagnostic guides of presence of fluid in the pleural cavity, were conspicuously wanting, and immediate incising permitted the escape of large quantities of fetid pus, and it was interesting in these cases of my series to note the absence of anemia, emaciation, intercostal bulging or retraction, visceral displacement, such signs as we would naturally expect where empyema had existed for a year and a half as in case from Dr. Wilcox, of Philadelphia, the patient appearing in a fair degree of health, rather plethoric than anemic.

The importance of great care in the physical diagnosis, a plea for more thorough comprehension of pathologic processes, the cultivation of greater power of observation are the objective points of my remarks, and I would be grossly misunderstood were any one to

infer that the usual methods of examination should be regarded as undependable. Our distinguished confrere of the old school, notably Musser, strikes this key note when he says "It is no credit to the profession at the present time to send to the surgeon a patient with the chest half filled with pus, or even with a pint or half-pint of such accumulation." Members of the profession have not taken to heart the lessons of such surgeons as Murphy, Willard and Eisenrath. These men, as well as many others whose clinical advantages enable them to maintain in close succession the history of each individual case, the physical signs and symptoms, the surgical findings, the bacteriological report, and the results obtained, are taking pains to give the benefit of their experience. Such material is invaluable, and I consider it the duty of the general practitioner to keep abreast with modern progress, and to pay as much attention to these common inflammations of the thoracic caviety as they have in the last decade paid to the inflammations of the abdominal cavity, and that there has been unwarranted negligence in this direction I am thoroughly convinced from my own experiences with 123 carefully recorded thoracotomies and thoracoplasties the result of delayed recognition or of optimistic therapeutic faith, and furthermore from the clamor from the most learned sources in the ranks of the old school which in a most convincing manner has been drawing attention to this special subject.

Permit me now to invite your kind indulgence to a brief resume of the surgical management of pleural effusion with especial reference to empyema and its complications, which must be regarded as strictly surgical conditions in order to justify the title of this paper and the under-current of my arguments.

The belief that nature assisted by treatment can and does remove serous effusion is the view that often leads to delay. If we bear in mind that both venous and lympathic channels by which pleural exudates are carried off soon become disabled by pressure, and by respiratory hindrance, we must necessarily abandon all efforts at absorption, and relieve pressure by tapping, as early as possible: since we know that adhesions very quickly develop, and that decrease in pressure facilitates absorption in the pleural surfaces.

I might here mention that in addition to remedial efforts Doerfler has recently suggested the application of the Bier principle of

treating inflammation by passive hyperemia in tubercular pleurisies with effusion.

Early tapping, when properly conducted, has no worthy contra-indications, but we must recognize a very potent guide for early paracentesis, and that is rapid development of the effusion with increasing dyspnoea.

In chronic serous effusion, our main hope rests in that repeated tappings will often stop the process, but failing in this, surgical intervention towards the relief of adhesions, and the establishing of ample drainage, and such other procedures as that of Mikulicz-Sauerbruch will accomplish a cure.

As to empyema, we believe it distinctly a surgical lesion, and while I have had a few examples in which the simple removal of the purulent fluid has been sufficient to effect a cure, yet this is only a chance, and not a creditable method of procedure.

The attempt, through a medical incision in the intercostal space, to relieve purulent accumulation, even though a drainage tube be inserted, and the fluid drained, it is only an attempt, a big tapping, if you please, and by no means surgical. To establish proper drainage, the resection of a portion of one, two or more ribs must be carried out, and how far to proceed to attain this purpose depends entirely upon the conditions found in each individual case.

In empyema, the earlier a thoracotomy is performed, the lesser the complications met with, and the shorter the duration of the disease. I have in mind a case of empyema in a woman who came in my clinic after suffering for nearly two years, she was profoundly anemic, and weak, and her condition on the operating table from dyspnea permitted me only the resection of two ribs, but I found that to accomplish a possible cure it would have to be done in two tempo, owing to advanced damage in the thoracic wall, involving the ribs, proliferating osteitis and necrosis extending to the scapula.

To enter into a description of the methods in vogue for the management of complicated cases of empyema, such as thoracoplasty along the lines of Estlander and Schede, or the lung decortication of Fowler, would be valueless on an occasion of this kind, the prime object of this paper being to draw the attention of the men in general practice to the phenomena of the pleural cavity, with

the same zealous promptness and efficiency with which they view nowadays the diseases of the abdominal cavity.

DISCUSSION.

DR. D. S. KISTLER: We know that a percentage of tubercular developments following an attack of empyema not treated surgically—very frequently the patient does recover for the time being. I would like to ask the author of this paper as to about what percentage of cases develop tubercular trouble afterwards, even though they do have a thorough draining of the cavity.

DR. D. ROMAN: In answer to this question of Dr. Kistler, which is a very important one, the true pathologic picture is—must be—inverted; that is, the cause of the pleurisy is tubercular. The cause of the effusion is tubercular, not the pleurisy, and is the cause of the tubercular process afterwards. There is no such thing as a simple idiopathic pleurisy followed by tuberculosis. The patient who becomes tubercular after the chest is opened simply manifests a continuity of the process. There is no such thing as tuberculosis following tubercular pleurisy; but you must turn the picture upside down and say it is simply a case of tuberculosis accompanied with pleural effusion. That is true in every case.

The only point for argument as to the bacteriological origin of the pleurisy is, is it simple, or is it due to infection? A pleurisy due to continuity of structure of a simple inflammation is very hard to prove clinically; because the majority of cases of the so-called simple pleurisy are due to the pneumo-coccus of pneumonia.

The pleuro-pneumonia will show the presennce of the pneumococcus lanceolatus. Infection through the venous channels, or through the lymphatics from other distant sources, really, metastasis, will show the presence of the diplococcus, the micro-organism that is frequently found in the exudate. Outside of that you can rest safe in assuring any one that the presence of the tubercle bacillus would be found even as I said in the paper—you can prove it—by the staining of the cover glass paper, or by the culture medium, as the statistics of many others show; 40 per cent. of the exudates of all pleurae are tubercular. An exudate has been proved

innocuous, that it contains no germs; and inject that into guinea pigs, you will develop tuberculosis in them; whereas, your stained preparation and your culture may sum negative; so that in reasoning from cause to effect, we must look upon all cases of tuberculosis following pleurisy as having been tubercular from the beginning.

CHOLECYSTOTOMY VERSUS CHOLECYSTECTOMY.

DEACON STEINMETZ, M. D., PHILADELPHIA.

Of the many diseases treated both medicinally and surgically at the present time, there is perhaps none requiring more attention than "Cholelithiasis." Quite often there have been errors made when diagnosing this disease. It is true that a small percentage of these cases have been treated medicinally, and the patients have recovered. A greater portion, however, has had recurrent attacks. The cases of "cholelithiasis" which do not yield to medical treatment, must be treated surgically, and it is here that I will endeavor to differentiate between the operations of "Cholecystotomy" and "Cholecystectomy," which I will describe briefly: The patient to be operated for cholecystotomy should be prepared in the usual manner for laparotomy. He should then be placed on a surgical table, on which are hot water pads, and under the patient, an air cushion, extending between the crests of the ilium and lower border of ribs, so as to raise the lower portion of the thorax. An incision should now be made, vertically from the lower border of the ninth rib, through the right rectus muscle, and about two inches from the median line, down to the peritoneum, opening the peritoneum and by the use of retractors, the lower border of the liver can be clearly made out. Turning up the liver we are able to locate the gall bladder. We should then proceed to wall off carefully with gauze pads, the intestines and peritoneal cavity. After this, the gall bladder—surrounding it with gauze. Open the gall bladder and drain its contents. To do this make a small incision in the apex, introduce a trochar and canula. Then withdrawing the trochar, empty the gall bladder, protecting all surfcaes from contact with the bile, which may not be sterile. It is advisable to

attach to the distal end of the canula, a piece of small rubber tubing to carry off the bile into a receptacle. After this has been completed—with a curette remove all calculi. Our next step is, carefully examine the common, cystic and hepatic ducts for the presence of calculus. Oftimes such conditions exist, causing an obstruction in the flow of bile, thus producing severe paroxysms of pain and sometimes jaundice, resulting in a distention of a hydrops of the gall bladder. The removal of calculi from the gall bladder and ducts and drainage of same are the proper surgical treatment of these cases. The drainage tube introduced should be a small rubber tube ten to twelve inches in length and attached by two sutures, going through the wall of the gall bladder and the rubber tubing, and then a purse string suture around the opening of the gall bladder to prevent leakage. This should consist of absorbable suture material. Surrounding this tube should be a cigarette drainage tube. These drainage tubes can now be carried to the outside of the incision, or another small opening or stab wound can be made to the right of the first incision, and the drainage tubes brought through it, (this lessens the chance of an incisional hernia) where there has been a long incision made. The tubes are now introduced into a sterile glass bottle.

Irrigation of the gall bladder with normal salt solution aids the patient in overcoming catarrh of the mucous membrane and this will often change the mucous fistula into a bilious fistula, which will then speedily close. There have been cases in which the fistula did not heal, in these cases the fistula may be obliterated slowly by astringents, or the Paquelin cautery.

The primary incision is then closed in the usual manner and sterilized, absorbable dressings are applied. The drainage tube is allowed to remain until absorption of the sutures has taken place, when, with slight traction, it can readily be removed. This completes the operation of cholecystotomy or incision and drainage for simple cases of cholelithiasis.

The operation of *cholecystectomy* or removal of the gall bladder is best accomplished from below upwards. Make an incision the same as in the previous operation—pull the liver, to a large extent, out of the wound, apply two forceps to the duct and cystic artery, and cut between the two. Apply ligature of catgut around the

stump of the cystic duct. The ligature should be applied with a needle penetrating the tissue so as to prevent slipping. If any bleeding occurs after removing forceps, insert more sutures. Grasp the lower end of the duct attached to gall bladder, and by careful dissection, free the gall bladder from below upwards. The raw surface left is now covered by flaps of peritoneum, which bound the gall bladder with the liver. Suture these flaps with fine catgut, leaving the ends long. Place a pad of gauze against the liver surface, having on the outer side of gauze rubber tissue. Tie the sutures which were left long in the flaps of peritoneum, over the gauze—bring end of gauze out of abdominal wound and close the wound or Mayo's operation of amputating the fundus and most of the gall bladder, excise the mucosa from the remainder of gall bladder and adjacent part of cystic duct. Use a cigarette drainage tube in the duct and suture tightly the remnant of gall bladder to the tube. When the drain is removed, the gall bladder becomes a fibrous cord. With the rapid strides made in the surgical treatment of the upper abdomen within the last decade, we are very much inclined to view the immediate results obtained, while very little is said of the final conditions resulting therefrom. During the last twenty years, the temporary relief of symptoms has been met with by simple incision and drainage—or cholecystotomy—very little attention being paid to the pathologic condition of the organ. Can we then affirm that in this class of cases we have left the function of the biliary tract in as nearly a normal condition as possible? We must realize that removal of the gall bladder does not cure cholelithiasis. Neither would we be understood as advocating cholecystectomy, in all cases of gall stones. Frequently these stones have been the initial cause which has induced subsequent pathologic changes in the gall bladder. These changes, which will prevent restoration of the normal function of this organ, and which would call for a cholecystectomy, are referable either to the viscus itself, or to the cystic duct. Among the pathological conditions indicating cholecystectomy are adhesions of the gall bladder to other organs, such as the stomach, colon or omentum, which is apt to recur after being broken up, injuries to the gall bladder, such as perforation from gangrenous or phlegmonous cholecystitis, stab or bullet wounds, chronic cholecystitis,

where the walls are thickened, or ulceration, fistulae communicating with skin or neighboring organs, cystic empyema of long standing, hydrops of the gall bladder, and in malignant diseases of the organ. The pathologic conditions of the cystic duct, calling for the removal of the gall bladder are impacted calculus, causing the lumen to become obliterated by cicatricial contraction, following inflammatory changes, fistulous opening into the stomach, duodenum or colon, ulceration of the duct, and in cases of stricture of the duct. Although we favor conservatism, and do not believe we should unnecessarily sacrifice such an organ, providing it is capable of draining itself, neither do we advocate retaining it in those cases in which it is liable to become a favorable source of infection, and the further development of calculi. In primary carcinoma of the gall bladder, cholecystectomy is unquestionably imperative. Moynihan has called attention to the fact that ninety-five per cent. of the cases of malignant change is due to the chronic irritation from gall stones. While the operation of cholecystotomy is the one generally performed, we should be very cautious in our diagnosis, to note every pathological condition in operating on a case of cholelithiasis, and thus be able to discriminate between an operation of cholecystotomy in which the mortality is compartaively small, and the more serious operation, cholecystectomy, which should only be performed for such pathological conditions, as those I have cited in this paper.

REPORT OF THE SECTION OF SANITARY SCIENCE.

The Failure of Modern School Methods, by Charles Platt, M. D.

Contagious Diseases, Their Recognition, Relation to Public Health and Prevention of Spread, by Ralph Bernstein, M. D.

Tuberculosis. Non-Segregated Versus Segregated Cases, by G. W. Hartman, M. D.

The House-Fly Nuisance, by L. H. Hendrixson, M. D.

Modern Methods of Sewage Disposal, by C. F. Mebus, Esq., C. E.

THE FAILURE OF MODERN SCHOOL METHODS.

CHARLES PLATT, PH. D., M. D., PHILADELPHIA.

My excuse for presenting this paper to the State Medical Society lies in the belief that the physicians' responsibility to the community does not rest solely in the prevention and cure of disease, nor in the care of a man's body. Man is a composite of three entities—body, mind and soul; and society, recognizing that each of these parts must be trained and cared for, has developed, for the body, the medical profession; for the mind, the school; and for the soul, the church. But, these three, body, mind and soul, together make one, and no part of this trinity can be considered as entirely separate from the other parts. It may be asked, Have we, as physicans, then, to do with the soul? Yes, for while this part of the man is of the supernatural rather than the natural, our brothers of the church will thank us if we aid them by instructing our patients as to the material wages of sin, and advise them as to their duties in the family and community. There is, moreover, the very real relation between body and soul shown in the overpowering influence of the physical condition in determining the development of the criminal.

It is not of the soul's relation to the body, however, that I wish now to speak, but of the mind—the body's ego, and of the interest we, as physicians, should take in the work of the schools. I do not

intend to refer to the disease-disseminating drinking cup, nor to the destruction of eyesight by faultily placed blackboards, nor to the deformed skeletons from badly constructed seats and desks, nor even to the evils of forced mental labor at the development period of life. I shall speak simply of the unsatisfactory results obtained by the modern pedagogical methods.

It will be granted without argument that the mind may influence the body. Does our modern school system so educate the mind that this influence shall be for the best? To get this desirable effect the education must be real—the school must so train and develop the mind that this shall be capable of sane, judicial, logical thought, of deduction, and induction. Do our schools do this? They are not even trying to do it! They are trying to fill the pupil with knowledge, which is a very different thing, and, and, in the lower grades, at least, even inimical to the true education. Not only is the method wrong but the work given is overwhelming in quantity and detrimental in this way to the child's mental growth. The school boards do not think so, but in accepting, as they do, a majority of correct answers in a school test as evidence that the course is not too difficult, they fail to recognize the fact that, owing to the undeveloped state of the child's mind, a correct answer is no criterion of his understanding of that answer. It is needless to add that knowledge without understanding, if one can imagine such a thing, is short-lived, and that in the end, the child so taught will have neither understanding nor knowledge.

Miss Caroline B. LeRow has collected many interesting answers to questions asked in school examination. Let me give you some of these, they are instructive, and illustrate in part what I have to say.

Ammonia, the food of the gods.

Emolument, a headstone to a grave.

Ipecac, a man who likes a good dinner.

Republican, a sinner mentioned in the Bible.

Asphyxia, a grumbling, fussy temper.

Circle, a round straight line with a hole in the middle.

Things which are equal to each other are equal to anything else.

To find the number of square feet in a room you multiply the room by the number of feet. The product is the result.

The Rocky Mountains are on the western side of Philadelphia.

Cape Hatteras is a vast body of water surrounded by land and flowing into the Gulf of Mexico.

Mason and Dixon's line is the equator.

Ireland is called the Emigrant Isle because it is so beautiful and green.

The Puritans found an insane asylum in the wilds of America.

Socrates destroyed some statues and had to drink shamrock.

An interval of music is the distance on the key-board from one piano to the next.

Congress is divided into civilized, half-civilized, and savage.

We have an upper and a lower skin. The lower skin moves all the time, and the upper skin moves when we do.

The body is mostly composed of water, and about one-half is avaricious tissue.

The chyle flows up the middle of the backbone and reaches the heart, where it meets the oxygen and is purified.

In the stomach starch is changed to cane sugar and cane sugar to sugar cane.

Now what do these answers show? A lack of knowledge, certainly, but more than that—an absolute lack of understanding. Some are based upon a confusion of sound, others upon an association of ideas; few only, show real incapacity, but they all show, notably and lamentably, a hopeless dependence upon the routine memorizing of supposed facts, and an utter lack of effort at reasoning. The majority of these answers are directly the result of false methods of instruction—they are the system's fault, not the pupil's. The child who says that Ireland is called the Emigrant Isle because it is so beautiful and green, shows in a sentence the hopelessness of the situation. There is, of course, the association of sound in the words *emigrant* and *emerald*—the pupil gets it emigrant, because this word was to him the more familiar of the two, and then he goes calmly on to say that it is so called because it is so beautiful and green. He does not himself see any connection, but that does not matter to him in school work; he is accustomed to repeat verbatim what he supposes

the teacher says. It does not make good sense, but neither does much of what he hears; if he had in the beginning any curiosity as to the reason for some of the statements given him to learn, this curiosity has become chilled by the flow of informing knowledge poured without cessation into his unwilling ears. It is a blessing that boys have fathers and mothers of whom they may ask questions, and thus obtain some education in spite of the schools.

Again, have we any right to assume that the boy who may have answered correctly, that Ireland was called the Emerald Isle because it is so beautiful and green, has really any more knowledge or is possessed of any better mental state than the one who called it the Emigrant Isle for the same reason? I think not. The correct answer indicates merely a fortuitous catching of the word—not any greater mental capacity. The word *because* was probably used in both cases with the same absolute indifference to the implied cause and effect.

A teacher, a patient of mine, told me that she had been greatly shamed because a visiting examiner had asked her children, averaging about ten years of age, the characteristics of the Malay forehead. None of the pupils was able to answer correctly, and the teacher had been criticized.

What a waste of time! What a waste of our money as taxpayers! In 1906, the United States expended $307,765,659.00 in public schools. How much of this, I wonder, was well invested. We find in the reports of one school such items as: Cray fish, for the biological department, $8.50 per 100, (the retail market price is about $3.00.) Frogs were purchased at $10.00 per hundred. For snails they expended $15.00 per hundred, and for rats, $50.00 per 100. However, I am unconcerned with the financial outlay, education at three hundred millions would be cheap if it yielded the proper results—that it does not, is my contention.

Is our nation, with its proud school system, an educated nation? Read the papers. Today we are hardly perceptibly removed from the witch-burnings of Salem; the wildest superstitions are current; you can not stretch the credibility of the public to the breaking point; anything and everything, however manifestly absurd, is food for newspaper comment and for argument.

A few years ago one of the Philadelphia papers conducted a discussion as to whether the earth was round or flat, and continued it for weeks *ad nauseam*. Every prediction of the world's end meets with hysterical acceptance by hosts of people; prophesies of earthquakes, of tidal waves, and of other public calamities, excite a fearful interest and occupy a first page position in our papers. Mrs. Eddy has many thousands of devoted followers among the "educated" classes. What does it all mean? To my mind it means the failure of the educational system. But let us take more concrete examples. Wanamaker, in one of his stores, employs from fifty to seventy-five girls in the audit department. These girls, averaging about eighteen years of age and nearly all grammar school graduates, can not be depended upon to add a column of figures correctly until they have had many months of practice. Miss Alida Williams, a New York principal, seeking to know how the school children were succeeding in business life, addressed inquiries to a number of firms. The testimony, she says, was interestingly and convincingly unanimous—that the writing of the children was illegible if rapid, and slow if legible; that they could not use the fundamental rules of arithmetic either accurately or quickly (as one employer says, "They need a day off to add a column and then bring back the wrong answer"); they have no initiative, requiring constant direction; they can not take down correctly simple dictation; they appear unfamiliar with letter-writing forms; their spelling of common words is unauthorized by the dictionary, and—they are very ill-mannered.

My own experience of fifteen years as a teacher in a medical school has brought me into intimate contact with many young men of high school and college education. I might be a teacher yet had I not become tired—miserably tired of trying to instruct in science which half the class lacked the mental development to comprehend.

I bring this matter before you, gentlemen, as I have said, because I believe that we as physicians of the body should be broad enough in our assumption of responsibility to include an interest in the body's major partner in life—the mind. I believe that we should interest ourselves in all that pertains to education, and

help make that education so excellent a thing that both body and soul may share in its benefits.

The trouble lies chiefly in the elementary schools—not with the teacher but with the system. Correct the methods here, and the nation will reap a profitable harvest. The average of school life in the United States is under five years; the majority of pupils, therefore, never pass the elementary schools, but whether they do or not, whether they go on to the upper grades or whether they go at once into business life, the result is the same. The successful man of tomorrow is the one who will first forget the false methods of his early school days, and, by his inherent intelligence, educate himself to the needs of life and to the pleasure of understanding.

DISCUSSION.

DR. RALPH BERNSTEIN: In discussing Dr. Platt's very scholarly paper, we must certainly admit that there is something radically wrong with our educational system. Let us take for consideration the boys who are educated abroad coming to our own country at fourteen, fifteen and sixteen years of age, graduates of the gymnasium, for instance. They come here into our own country and speak English practically better than our own boys do at school at a similar age. Why is this? As Dr. Platt has said, no doubt there is something wrong with the system somewhere. In my routine duties as medical and physical director of the House of Detention for Juveniles, it is almost a crime to think of it that we have boys coming there day after day fourteen and sixteen years of age who are absolutely unable to read or write; and yet these boys have gotten into the fourth and fifth grades of our public schools, have been going to special schools from time to time, and then they are supposed to be versed in the ability to read or write, or even have the necessary requisites to become good American citizens; and yet they grow up in this age of enlightenment of ours in such a predicament.

Even if there is something wrong with the system of education in our public schools, we must take into consideration the boy's or girl's peculiar idiosyncrasy. Is he at all times able to grasp correctly those things which are given to him? No matter

whether they be given to him in good form or not, is he able at all times to get the idea? In other words, we must take that boy's individuality, must bear that in mind; and, as I believe, the special schools for backward children are at the present time trying to take those points into consideration.

DR. EDWARD M. GRAMM: I had a little experience in one of the special schools of Philadelphia which I think shows that the instruction ladled out to the children—because it is ladled out to them—is not as a rule digested after it is swallowed; nor do the teachers themselves in many cases know why they are teaching, or what they are teaching. I went to a special school once, and the scholars were made to do stunts for me. Among other things teacher said: "Now, boys, 'Lives of great men,' and the class answered in unison:

"Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Foot-prints on the sands of time."

"Now, who said that, children?" "Lincoln!" What are you going to do in a case of that kind? They knew the quotation; they did not know where it belonged, nor what it meant. It was at a time of the celebration of the Lincoln anniversary and the teacher had instilled in their minds that it was Lincoln who had gotten off that portion of the Psalm of Life.

Another teacher asked the following question, which illustrates a phase of teaching that cannot develop the mind: Add ⅔ and ⅞; how much? Quick?" That was the way she expected the answer. The boy did not answer, but sat down. A few more fractions were given to the next boy—"Quick!" That is mental arithmetic! What sense is there in enabling children to add two or three fractions together mentally in a hurry? What training is it? Absolutely none. The children do not grasp what they do it for, and their mind is not trained by such gymnastics.

When the athlete goes to work for the purpose of training for a certain event, he does not at once do the thing that he intends to accomplish, and thus trains his muscles both for endurance and great exertion. In other words, if he is to

raise a hundred pound dumb-bell, he does not raise the hundred pound dumb-bell; at the first trial he raises a one-pound dumb-bell and he keeps on raising it and he keeps on raising it and he still keeps on raising it; and after awhile his muscles are developed; then he raises the hundred pound dumb-bell without any exertion whatever. But in education the trouble is that our children do not have their minds trained so that when the supreme test comes they are equal to the occasion. Of course, it is a fact that the board of education endeavors (I am speaking of Philadelphia) to bring all the children up to the same level. In other words, the children of the districts where the families pay some attention to the education of their children, where they send their children to school with food in their stomachs, where they send them with clean faces and clean bodies and with rested brains, because they have gone to bed early, are supposed to do a certain amount, and they do it readily. They even do these foolish things readily; but when you come down to the schools where the children are drawn from the slums (many of those poor little things come to school without anything to eat; they come to school having been kept awake by brawling parents, or brawling neighbors; they come without proper sleep because of lack of accommodation for the families for proper sleeping,) it is against all reason to expect the same of them as from the more favored little ones.

A child must be trained in that way that Dr. Farrington recommends. A little thing must be learned; that little thing must be supplemented by the same thing again, another time by the same thing until the mental process that enables the child to accomplish the thing or to think the thought has become so strong that it is done absolutely without effort, it is done because the child can not do anything else. Then when more is to be added, it can be added, and it can be done nicely; but all these mistakes that are made by our children—or, as Dr. Platt gave us to understand, no mistakes: lack of comprehension of the relationship of things, lack of understanding, of the intent of the words that they are taught—the child must be taught so that it can compare a round object with a square one, can tell you why a small cube is a cube as well as a large cube; why a small circle is the same as a large circle, so far as being a circle is concerned; why a green object is the same as another green

object, and so on. When the children are taught the study of facts, the study of relationships in that way, mental processes become so habitual that they can not help but have an educated mind; but how many of us could in a moment add 3/4, 7/8 and 5/6 "quick?"

DR. E. A. GLENN: I wish to ask concerning the value of kindergarten work. There is a great deal of recent medical opinion condemning it; and yet its methods are very similar to Dr. Gramm's ideas.

DR. CHARLES PLATT: The question with regard to the kindergarten—I have always regarded the kindergarten as a place to dispose of the children between the time when they were a nuisance around the house and could not be sent to school. I doubt very much whether, in the average kindergarten, the child acquires any mental development. That depends entirely upon the teacher, however; and there are doubtless schools—kindergartens—where the work is well done, where the teacher is a natural teacher, one who appreciates the needs of education, and who will develop in her children an improved mental state. That is the same kind of training that should be obtained from the mother. It is delegated to the kindergarten simply because of the desirability of disposing of the child, as I have said.

The kindergarten system does not appeal to me at all, except as a substitute for maternal instruction; and if the teacher is capable, if she appreciates the undeveloped state of the child's mind, then the child will profit. The foolish questions that children ask are evidence of how little they know. We have a false ideal, unless we are very careful, of the capability of the child's mind. We tell them things and the child accepts them; and we forget that the child has really learned nothing. They accept them because you say so; your explanation may have included words of which they have no knowledge whatever; but they, as a rule, do not pursue the question any further, unless it is with the parents, where they may then continue their foolish questions and ask the meaning of this word and that word and so on. But the child, all through life—the early life—will continue to accept statements without any understanding; and in school they do so invariably. What little they do learn in school is kept apart in their minds. It is not ap-

plied to life. The fault, to my mind, is, of course, chiefly in the multiplicity of subjects and in the routine instruction.

The matter that Dr. Gramm spoke of—of the children coming to school with no food in their stomachs, physically unable to use their minds—is a serious one, and is a further argument for simplification of the elementary school. The poor child with improper home surroundings, with lack of food, and so on, is of all children the one requiring the simplest possible kind of instruction—absolutely different from the ordinary school instruction.

CONTAGIOUS SKIN DISEASES; THEIR RECOGNITION: RELATION TO PUBLIC HEALTH AND PREVENTION OF SPREAD.

RALPH BERNSTEIN, M. D., PHILADELPHIA.

It was the worthy Chairman of our Bureau, Dr. Charles Platt, who suggested the title of my paper which I am to have the pleasure of presenting to you. As a prelude, to quote from Dr. Platt: "The thought that has come to my mind is in line with the degree of contagiousness of the more common skin lesions. This is the first question asked by the patient: 'Is it contagious?' and it is not at all well answered by reference to the ordinary text-books. What is the degree of contagiousness; what precautions should be taken to guard other members of the family and the general public?"

It shall be my pleasure then to attempt to portray unto you a few of the more common contagious skin diseases, the diagnostic factors which would enable us to easily recognize them, their relation to public health and methods of prevention of spread.

I shall begin by outlining the salient features which would enable us to correctly diagnose those dermatological affections which are of a contagious nature; trying at all times to be thoroughly practical, and attempting to give unto you the benefits of my clinical experience as gathered in my private practice and the various institutions with which I am connected.

We can only hope to come to successful conclusions by the

most careful observations, the closest scrutiny, and assuming always that our patients are often wont to lead us far, far astray, at times innocently, but with frequently a purpose, which must not be overlooked, so that we in turn must be alert and not be misled by thoughts or suggestions which our patients are apt and wont to impress upon us; believing always and most thoroughly in our own ability to come to successful conclusions.

The conditions which I shall mention will be those which are more or less common and those which we would be apt to have to contend with in the routine of everyday office practice.

Among those to be mentioned are the contagious form of impetigo, its closely related neighbor ecthyma, dermatitis repens (a newer dermatologic affection, yet being recognized more and more every day, it is beginning to be considered among the more common dermatoses, impetiginous form of eczema (which is, to my mind, of a contagious character;); seborrhea (which is decidedly transmissible because of the existence of the seborrheic micro-organism); sycosis vulgaris, the Tricophyton infections, erysipelas, scabies, and lastly syphiloderma.

Having pointed out the diagnostic features of the foregoing conditions, I shall then take up the question of their relation to public health, and shall then give a resume of those thoughts which appeal to me as being most important in the prevention of the spread of skin diseases from the standpoint of the public.

Permit me to begin, then, if you will, with a few factors regarding impetigo contagiosa. I begin with this contagious lesion because of the fact of its intensity of transmission. Of the more acute infective dermatoses I thoroughly believe impetigo contagiosa is the most infective. The disease has its beginning as small, flat, distinct vesicles containing a serous fluid which in the course of twenty-four hours becomes pustular by secondary infection. The eruption is most usually seen upon the face and hands, yet any part of the body is apt to be infected. In this state of the disease it is rarely recognized as a beginning attack of impetigo contagiosa. It differs in its relationship to chickenpox, which it closely resembles in this stage, because of the fact that the vesicles contain a fluid which is not decidedly clear, as in the vesicle of chickenpox, but is decidedly cloudy in nature,

and is not as disseminate. After twenty-four to forty-eight hours rupture occurs, which is followed by the exudation drying upon the skin as thin waferlike scabs which have the characteristic "stuck on" appearance, being honey yellow in color. Now, then, the important point to be remembered in the diagnosis of this condition is that the crusts seem to be very loosely attached; the edges tending to curl up and drop off, leaving behind a reddish, exuding base.

Another point which is apt to lead us astray is the fact that a patient will very frequently be seen having nothing but the presence of these reddish spots,—the scabs having already dropped off or having been removed by the patient. This presence alone often leads us astray in a diagnosis of the existing condition. If, however, the patient is permitted to return in twenty-four hours, being directed to keep hands off, the characteristic scabs very quickly again present themselves in their true picture.

This is a highly contagious condition because of the fact that the infection is a streptococcic one primarily, and secondarily a staphylococcic one; the disease therefore being of a highly infectious nature and often spreading with great rapidity among the inmates of orphanages and asylums.

Chickenpox has occasionally been seen associated with impetigo grafted upon the individual lesions, more or less causing confusion in a proper diagnosis of the existing condition. It must not be forgotten that the affection often undergoes spontaneous involution, occasionally clearing up in about two weeks.

Let us next consider for a few moments the question of the contagibility of ecthyma, that condition which I previously stated was so closely related to impetigo contagiosa because it is considered as a further stage of impetigo, consisting of punched out ulcers, not very deep, and usually found upon the lower limbs; usually in the aged, especially those who are debilitated and poorly nourished; yet impetigo contagiosa which has undergone an ulcerative change, whether in young or old, due to unhygienic conditions, should as well be considered as an ecthyma. This condition naturally is therefore of a contagious nature.

Dermatitis repens, as stated in my opening remarks, is begin-

ning to become more common, especially because of the fact that it is beginning to be more readily recognized, and appeals to me as of a contagious nature. The micro-organism, however, which is responsible for this condition having not as yet been isolated.

Croker was the first one to mention dermatetic repens and give us a clinical picture of its condition.

It usually follows an injury upon the hand,—usually picking out the thumb for some unknown reason, but not always so. It presents itself usually as a small bleb which extends peripherially, denuding the skin as it goes. There is a serum-like discharge constantly going on, and the area of demarkation in its advance is surrounded by a white, turgid ring. The base of the ulcerated condition is usually deeply red in color and highly inflamed. The affection has a tendency to travel. In one case I recall it having traveled up the entire arm on one side and partially up the opposite arm, the patient having infected himself on the other limb. Dermatitis repens is therefore to be considered of a contagious nature.

Eczema next presents itself for consideration as to whether it is of a contagious nature or not. I shall not at this time, nor is it the intention of this paper, to enter into a discussion as to whether eczema is of a contagious nature. Suffice it to say, however, that the impetiginous form of the disease is one of the infectious skin diseases; the impetiginous form of eczema being a secondary infection of an already existing eczema, due to the entrance primarily of the streptococcus and secondarily of the staphylococcus, therefore practically being the implantation of an impetigo upon an already existing eczema.

I purposely omit at this point the question of the contagibility of the so-called seborrheic eczemas, as such a condition does not rightly exist. It should be classified as a dermatitis pure and simple with a distinct entity of its own, as it is constantly now being so classified by dermatologic authorities from time to time.

The question as to whether simple seborrhea is of a contagious nature or not is not entirely a settled one, because it has been demonstrated that the micro-bacilli of seborrhea seem to be a more or less constant factor in all individuals, it having appealed to me that the lowered vitality on the part of the individual giv-

ing the micro-bacilli the ability to rapidly multiply and become active, thus setting up a condition known as a seborrheic dermatitis, which condition is to be recognized by the preponderance of fatty scales, a highly inflammatory existing condition and the presence of marked itching; the lesions usually being located upon the chest, in between the shoulder blades, in the arm pits and about the hairy parts. Papules are occasionally to be seen which are surmounted with fatty scales scattered here and there, often coalescing to assume many different forms and odd gyrations. These patches are clearly defined by fatty, yellow scales and a decidedly crusty border which, upon being removed, leaves a moist surface. This condition is usually chronic and tends to remain a long time, attacks often returning where the treatment has not been strenous enough to entirely annihilate the micro-bacillus which is responsible for the condition. A seborrheic condition known as "Pityraisis Steatoides" usually presents itself upon the scalp, in the eye brows, the mustache and bearded region, consisting of small, pale, yellow scales, which upon the scalp are usually known as "dandruff," and which are accompanied with local itching and have a tendency to rapidly recur after their removal. As is well known, the micro-bacilli of Sabouraud are intensely active and are the most responsible cause for universal attacks of baldness, a detailed account of which I have given in the "Evolution of Baldness" in my paper as published in "The Hahnemannian" and read before the Homœopathic Medical Society of Chester County at Downington.

This condition is therefore highly contagious. Therefore, the important part played by unsanitary barber shops and unsanitary utensils used in our own homes in the transmission of baldness is a most important problem which calls for radical measures to prevent our future generations from having bald and shining tops, more of which I will have to say later on.

I purposely omit at this point the question of *local* baldness being of a contagious nature because it has not been definitely determined that alopecia areatas are of a contagious nature. There are authorities who contend that local baldness is of a contagious type. I quote from my paper on "Local Baldness," as read before the Delaware County Homœopathic Medical So-

ciety at Strath Haven Inn at Swarthmore, Pa.: "Local baldness occasionally follows impetigo of the scalp, and is to be seen associated with the lesions of impetigo upon the face and elsewhere, and is occasionally mistaken for alopecia areta (the presumed contagious form of alopecia areata). There is no doubt that many of the so-called epidemics of alopecia areata are in reality but attacks of local baldness following impetigo. I glean from Volume 18, No. 1, of the Derm. Zeit., Berlin, it being reported that twelve out of thirty-five policemen in a certain police station all developed alopecia areata. It was the custom of the policemen, when off duty, to lie upon the beds occupied by their fellow-policemen when taking a nap during their noon hour. It was noted that the areas were those parts of the scalp which came in direct contact with the pillows. Might not these all have been attacks of alopecia areata following impetigo?

Sycosis Vulgaris will be our next theme for a few moments. That this is purely a pustular condition there is no doubt, being a staphylococcic infection of the individual hair follicles, the hair shaft standing out prominently, piercing itself through a small pustule. This condition is naturally highly contagious. It is a picture which is easily diagnosed, but must not be confounded with a true "Barber's Itch" because it is not a Tricophyton infection, as already mentioned. Yet little harm would come here because of an improper diagnosis because of the fact that both conditions are treated similarly; and is usually seen upon the bearded region.

The Tricophyton infections now present themselves to us for consideration.

I first of all refer to the true "Barber's Itch," the Sycosis barbæ, which is an infection by the Tricophyton fungus, usually beginning quite superficially upon the face as either a simple ring worm with its clear center and circinate outline, and its fine vescular points spreading peripherally. This condition may remain so or may go down into the follicles, giving the nodular tumified form of sycosis.

This condition is easily recognizable by its hard, lumpy, tumified apearance; its duration frequently lasting a long time and being most obstinate to treatment. Simple ring worm may as

well present itself upon other parts of the body, especially in children.

It is not to be forgotten that we may have upon the scalp a diffuse trycophytosis, and this has very frequently been mistaken for seborrhea, but is of a much more contagious nature, however, than seborrhea possibly could be. The microscope here will aid us in a diagnosis, presenting large numbers of fungi, and beneath the scales are to be found reddish points or papules.

We must, as well, not forget the typical ring-worm of the scalp with goose-flesh appearance, with stumps of broken off hair, and its defined circinate borders, in direct contrast to alopecia areatas, which are smooth and lustreless and do not have the goose-flesh appearance, nor do the hairs seem to be broken off, being quite devoid of hair, occasionally a few fine, downy hairs are to be seen. The patches of ring-worm are characterized by dry scales which are usually greyish in color. The hair usually breaks off close to the scalp, leaving the stumps exposed, and which can be easily removed by the fingers, this act itself being diagnostic.

It is to be remembered at this point that adults do not suffer from ring-worm of the scalp, it being practically a condition which is to be seen only in the scalps of children.

That the Tricophyton infections are of a highly contagious nature there is no doubt, frequently spreading through institutions and orphanages with great rapidity, and of great intensity and very obstinate to eradication, even lasting for a year or two, showing the active resistance of the spores.* * * * *

That erysipelas is of a highy contagious nature we are more than aware, and that utmost precautions have always been taken to prevent its spread, and especially when one is doing surgical work.

The question as to the recognition of erysipelas and the points to be borne in mind are, that erysipelas usually begins at a point, spreading itself peripherally with a well defined border. The inflammation is deeply seated, involving the subcutaneous tissues, which is quite in contrast to an acute inflammatory erythematous eczema which would come in for differential diagnosis. The sensations in erysipelas are those of fullness and burning and occasionally decided pain rather than that of itching. The character of

the discharging fluid is quite different from that of acute eczema, being more serous than watery. There are, as well, constitutional disturbances and fever; not forgetting the line of demarkation, this, however, not always being prominently defined. There is a tendency to vesiculation in erysipelas; however, the vesicles are usually larger than those in eczema, having a tendency to become bleblike in character.

I should like to mention at this point that a saturated solution of Magnesium Sulphate has always given the best of results in the treatment of this condition, as well as a preventure of spread of the condition to adjacent parts, a hyper-saturated solution of the salt being applied with eight or ten layers of cheese cloth which is covered over with oiled paper to prevent its evaporation, because it rapidly becomes hard and recrystalizes when permitted to come in contact with the atmosphere. Experience has demonstrated that the oiled paper is to be preferred to oiled silk because of the fact that the oiled silk rapidly crumbles away under the influence of the action of the Megnesium Sulphate.

Scabies or the "Common Itch" is certainly of a highly contagious nature,—that is to say, contagious when one comes in direct contact with the patient for a greater or less extent of time; in other words, direct contact with the patient's body or sleeping in the bed clothes which have been infected by a patient having had scabies. The mere shaking of hands with a patient whose hands have as well been infected with scabies has never transmitted the disease to myself or those who are associated with me in my dermatologic work in the various skin clinics, which we have tried out more than once.

Scabies is at times quite easily diagnosed, and yet again there are cases which are more or less atypical and difficult. I shall consider the lesions in their order as produced upon the hand, wrist, elbow, axillæ, and penis. While lesions are to be found upon the abdomen, buttocks, inner surface of thighs, legs and between the toes, in these locations they are not quite as characteristic as those to be observed in the before-mentioned regions; so that I shall limit myself to a discussion of these parts, with the hope of making the matter of recognition of this annoying dermatose somewhat clearer.

The predominant symptom of which the patient complains is the intense itching, always worse at night, due of course to the activity

of the itch mite, the Acarus Scabiei, which is a noctambular parasite. The chief characteristic of the eruption is the multiformity, consisting of vesicles, excoriated papules, pustules, scratch marks, and is frequently contaminated with impetigo and eczema. Upon the hands and wrists the condition is decidedly characteristic, appearing especially between the fingers, as numerous vesicles and scratch marks. Here are to be found the burrows, especially on the lateral surfaces of the fingers. A hand magnifying glass often assists in locating the burrow; Sabouraud offers the ingenious suggestion of applying ink to an infected region. The burrows are filled with ink by capillarity, the excess is wiped off and leaves the burrows standing out quite prominently. It is to be remembered that scabies attacks as well the palm of the hands. On the wrists, especially at the folds, may be seen typical lesions, vesicles, infected and non-infected, burrows running transversely, and numerous scratch marks. The bend of the elbow usually does not show burrows, but instead, first presents numerous scratch marks, followed later by secondary infection and vesiculation. Likewise at the axilla burrows as a rule are not to be seen, scratch marks here seem to be most predominant, usually at the anterior fold, on a line with the seams of the under-garments. The penis is indeed a most favorite seat for the scabies lesions, both upon the shaft and glans of the organ, appearing as red papules and occasionally associated with vesicles and burrows. To recapitulate, the diagnostic features of scabies are, the presence of the burrow with its itch mite; intense itching, worse at night; absence of lesions on face and neck; occasional presence of lesions on face of nursing infants; presence of lesions about the nipple in the female; presence of lesions upon the shaft and glans of the penis; characteristic lesions to be seen between the fingers and at flexures of wrist.

If there is any one other condition which as a rule is diagnosed as scabies, especially in infants and children, it is the itching dermatose of Bateman. I refer to lichen urticatus or papular uticaria, which is usually to be seen during the earlier years of childhood. It differs from scabies, especially when upon the hands and wrists, in the fact that it begins as an urticaria, the lesions being rather small, and frequently decidedly papular in character. As a rule when the patient is brought to the physician the disease is usually

well developed, making its diagnosis from scabies all the more difficult. In this well developed stage it presents rather pale red papules with scabbed tops, usually upon the hands and limbs, although the face and body are frequently the seats of lesions. Minute disseminated vesicles occur here and there with occasionally a pustule, infected by scratching, as the itching is intense. There is a tendency for the papules to become linear following one another closely, probably along the line of a scratch mark. As old lesios disappear they leave behind a dark spot, and frequently the older papules appear to be quite flat upon their surfaces, and if held at a proper angle with the light, they appear to be quite shiny. The duration at times is quite long, usually better in the winter time, only to recur when warm weather sets in again. The main points of differentiation from scabies are, the absence of burrows and the itch mite, absence of lesions on the penis, occasional presence here and there of wheals, with an occasional antecedent history of urticaria; tendency of papules to become flat and shiny, recurs in summer time, itching usually worse in the day time, and is not rapidly responsive to treatment. Its resemblance to scabies is mostly in its appearance.

We are now ready to take up, for a few moments, a consideration of the recognition of the cutaneous manifestations of syphilis. It is more than important that we should be able to recognize the presence of lues from the cutaneous standpoint. It is indeed to be regretted that patients are going about from day to day with unrecognized syphillitic manifestations because of the inability of the physician to recognize their existence. Probably the most important fact accounting for the physician's inability to recognize lues is because the physician hesitates to ask his patient the necessary leading questions which would assist him in a diagnosis, because of his or her great fear of offending his patient. This is indeed a crime and is unfair to the patient himself and to the community at large. If a physician hesitates in asking the patient the necessary questions, regardless of the fact of whether his patient feels insulted or not, it should not deter him from doing his duty to the public as well as to the patient himself.

The contagibility of syphilis we do not question for a moment whether it be in its earliest manifestations or even in its latest, all

forms of syphilis now being considered of a highly contagious nature, whether it be the mucous patch or whether it be the broken down gumma. One could write a long paper on the question of the recognition of the cutaneous manifestations of syphilis. It is not my intention to go into details on this question at this point, merely to mention a few of the general characteristics.

As to their distribution, we know that an especially diagnostic feature is the presence of the lesions upon the soles of the feet and the palms of the hand; we know the presumed ham or copper color of the lesions; their oddness of configuration at times; and a point which comes to my mind at this moment is the multiformity of the lesions,—that is, the presence of papules or pustules or macules at one time; being a most important diagnostic point from small-pox for the fact that small-pox goes through its various stages of development parri passu with the existing conditions, that is, it develops from one stage to another, hand in hand; there is not that presence of various formed lesions, which is the case in syphilis. *

The question of spread of the various contagious dermatologic conditions is necessarily a most important one. Those conditions which are of a highly contagious nature certainly demand the prevention of spread of the disease to adjacent parts of the individual who is affected, and a prevention of spread to those who are closely associated or related to the patient in question.

Where a patient is affected with a contagious skin disease, the unguentous substance which is used well beyond the lesion being of such a nature as to be antagonistic to the micro-organic life which exists in the condition to be combatted; while beyond and about the infected areas it is as well advisable to use a mild antiseptic solution; mild solutions of bichloride sometimes seem to be effective; but it must always be borne in mind that occasionally a patient's skin is decidedly sensitive and tender and reacts very unkindly to bichloride solution. Solutions of lysol and carbolic acid and some other antiseptic substances likewise very frequently cause cutaneous reactions, so that where the skin is so unusually sensitive and tender as to react to the substances named, the mere use of a mild alkaline solution seems to be entirely satisfactory in preventing a spread of the existing condition. Of course, it is of the utmost importance

that the patient should be directed to use his or her own towel and soap during the existing condition, and should as well use their own bed clothing, which should be thoroughly scalded after the patient shall have been entirely cured.

Regarding the question of syphilitic patients who have apparent cutaneous manifestations, whether they be a mucous patch or a chronic syphilitic ulcer, these patients should certainly be most thoroughly informed as to their existing condition; they should be told to use their own eating and drinking utensils; they should be cautioned about using public fountains for drinking purposes; they should be cautioned about going into public places to eat or to be shaved or in public baths or anywhere at all in which they would possibly come in contact with the public at large. I recall especially one case in which I had given most rigid instructions as to the directions which a patient was to carry out regarding his condition and the protection of the public. He had a number of acute mucous patches about the lips, having left the dispensary at one of our institutions, I happened to come across the patient a short distance away at a public fountain drinking copiously of the drinks which were to be sold, after all my care in instructing the patient; therefore one can readily see what possible sources of infection these patients can be and how highly important it is that syphilis in its contagious form should be on the list of reportable diseases to our bureaus of public health.

It is just as important for the public at large to be cautioned upon the fact of the existence of such conditions; they should be instructed not to drink from public cups which are attached to drinking fountains; those who patronize the cheaper restaurants should be cautioned about drinking from cups or glasses which have cracked edges because of the fact of the danger of disease germs lurking in these crevices which are not properly cleansed or sterilized. An innovation at the present time which is of the utmost importance to public health in the prevention of contagious skin diseases, especially where they linger about the mouth and lips, is the instalment of the sanitary drinking cups which are being attached to public drinking places and which can be purchased for a penny, being contained in slot machines, which insures each person getting a drinking cup of his own, which is composed

of card-board glazed over with parafine. It is requested that the cup be crushed immediately after using, and is thrown aside into a receptacle for the purpose.

Another method for the prevention of spread of skin diseases in public places is the use of liquid soap, which is now practically installed in all modern institutions. Many of the barber shops which are not modern in their technique are the lurking places of many skin diseases which are transmitted to many an innocent person. In the first place, a number of the barber shops are responsible for the transmission of such diseases as syphilis, barber's itch or the true ringworm, sycosis vulgaris, common baldness, acne, furunculosis, impetigo contagiosa, epithelioma, lupus, etc. Many of these barber shops have the habit of using hot towels on a patron, which are repeated from one patron to another. In controversy with a barber on this point he advised me that he considered a hot towel was always sterile, and that if he did use it from one patron to another he could not see how he was spreading infection; yet when I remonstrated with him the fact that many of the spores were not killed by a towel merely being immersed into hot water, he did not seem to be able to grasp the advisability of using separate and individual towels for each of his patrons—and yet this was in a first class shop. The barber, by the use of the same comb and brush, disseminates the germs which are responsible for baldness.

The advice, therefore, to the general public should be that those who patronize the barber shop should have their own brush and comb, which should occasionally be sterilized and should insist on individual towels. There are, however, many of the more modern barber shops today who have a sterilizing apparatus of their own in which towels, combs, brushes and shaving utensils are sterilized, and attendants standing beside the barber robed entirely in white, handling the sterilized towels, etc. upon a sterilized tray. A remedy for the existing evils in barber shops should be the passage of state laws regulating the fitness of barbers to follow their trade, and laws regulating the sanitary conditions of their emporiums. Such laws, according to my present knowledge, now exist in Wisconsin, Michigan, Kentucky, Missouri, Minnesota, Connecticut and Washington. In New York, New Jersey and California, if I am

not misinformed, such laws have been repealed; but in the states in which laws exist, demands are made at every sssion of the Legislature to have them likewise repealed. Strenuous demands have been made in our own state here from time to time to enforce passage of state laws regulating barber shops, but so far they have been most dismal failures. It appeals to me that the best solution of the problem would be that the local Boards of Health should have the responsibility in charge of the sanitation of the barber shops, and should see to it that all barbers have a general understanding of the nature and effects of contagious skin diseases, the proper laws and rules regarding sterilization and sanitation, which certainly means that we would have a less amount of skin diseases traveling from one person to another, and would most certainly mean the decrease of the dissemination of syphilitic virus from one patron to another.

DISCUSSION.

DR. EDWARD M. GRAMM: Dr. Bernstein has very properly taken up the subject of the recognition of skin diseases. It is an unfortunate fact that the average skin disease is not diagnosed, in the majority of instances, by the physician under whom the patient places himself. Now, we all know that many a patient comes to us with lesions that appear trivial; and from prior experience we know that skin diseases are hard to cure and in our hearts we fear to take hold of the treatment of these cases for fear that our patients will feel that we can not conquer their other diseases, just the same as we do not conquer the skin manifestations of illness.

In our school it is an unfortunate fact that many of us believe that when a skin manifestation appears upon the surface is it evidence of an underlying lesion, of a dyscrasia, of an inherited taint, or of a something else occult which is mysterious, which developed long before it acted to develop a distinct disease. Now, while it is true that many forms of deviations from health result at some stage of their progress in skin manifestations, yet those diseases, or those conditions, are in the minority. I clash with a great many of our physicians in this statement: and yet a careful observation of the patients, with a full belief that dyscrasias do exist, that

heredity does play an important part in the development of illnesses, nevertheless has led me to the conclusion that the majority of skin diseases that we are called upon to treat, have not, as I said before, an occult long-gone-before reason for their existence. With the fact borne in mind, that the cocci and the bacilli which we find upon the surface during the existence of skin diseases are not of a motile character, it leads and must lead us to the only true belief that there must have been actual contact between the patient who has a disease and the one to whom it has been transmitted. This means, in other words, direct contact through carelessness, mediate contact through bed clothing, through wash-rags, through sponges, unsanitary bath room adjuncts, through pencils and slates and books in our public schools; and leads us, then, to the methods we should recommend for the prevention of the spread of skin diseases. In other words, where, for instance, it is impossible to prevent patients from mingling with other individuals, the cocci or bacilli should be placed in such a condition that they can not be transmitted by contact from one individual to another.

Take, for instance, the common affection of ringworm, which we find among children whose parents are told to keep them home from school. The child is kept home from school, and in the opinion of the average patient, thereby becomes a nuisance, simply because they are too lazy to take care of their own offspring and prefer to delegate that care for eight hours a day, if possible, to the teachers. The consequence is, when the child wants this, wants that, wants the other thing from restlessness or from being kept in the house, and finally says: "Oh, can I go out and play?" it usually is allowed to go out and plays, and then it comes in more intimate contact with other children than it does in the public schools. A very simple procedure, and a procedure which abstracts moisture from the tricophyton fungus and which ultimates in its death, is the application of a fifty per cent. boroglyceride solution to the affected areas. Some parents say it is an awfully mussy thing to do. Well, everything in illness is awfully mussy. People are perfectly willing to be cured in their own way, if you only leave them that much leeway. They do not want any musiness of the children's clothing, or any greasing of the underwear, or any greasing of the bed clothing which is upon the beds in which the children sleep; that

causes too much trouble, the doctor ought to cure the case by giving internal remedies; but the placing of the cocci and the placing of the bacilli by local applications in a condition so that they can not be handed from one to another by actual contact, is the first thought the physician should have thrust upon him. In the second place, the herding together of people in the various lodging houses or any place where intimate contact of body with body occurs, should be done away with as much as possible. The public bath houses are another means of spreading skin diseases. Shower baths should be substituted for pool bathing in all places that the general public uses.

DR. M. M. FLEAGLE: There is one point I have not heard touched upon; that is, in these days, when so many people make pets of the lower animals, as, for instance, cats and dogs—whether it is not possible for some skin diseases to be contracted from that source. The reason I ask this question is, that a short time ago I had a case that I could not trace the origin of the sore to any other cause; and I would like if some of these men on dermatology would give an outline—short outline—of a few of the diseases that might be transmissible from the lower animals; or whether is is possible at all.

DR. E. H. POND: I believe Dr. Bernstein is correct in emphasizing the importance of diagnosis in these skin diseases. In our town several years ago, when we were having an epidemic of smallpox there, a number of cases of impetigo contagiosa were diagnosed as smallpox, and were sent to the municipal hospital. It might have given a good deal of trouble, but fortunately was covered up.

DR. RALPH BERNSTEIN: It certainly is a most important question as to whether skin diseases are not contagious from the lower animals. That can be certainly answered by the word yes. Especially so the ringworms from cats and dogs, and the form of ringworm known as kerion, especially from horses, is specially to be seen from those who have to attend to animals, especially in the country districts. About others I do not know. We very seldom see a case of kerion in our cities; but usually in the country districts you will occasionally find a form of ringworm which is entirely different from the usual ringworm, it being circinate in

outline, and that being practically the only way in which it is similar to other forms of ringworm. It seems to be honey-combed; it is quite hollow, and has a very characteristic scab; but is thicker and heavier than impetigo. It is usually found upon the bearded regions and the scalp. That is more or less a rare condition; it is not seen every day.

Then, of course, there are the fungous skin diseases, which occasionally will be transmitted from the lower animals unto man; but I think the one that need concern us mostly is the ringworm, being especially transmitted from the dog and cat to those who fondle and handle pets.

TUBERCULOSIS—NON-SEGREGATED VERSUS SEGREGATED CASES.

G. WYLLIS HARTMAN, M. D., HARRISBURG.

Doctrines against tuberculosis are demanding the attention of people everywhere. Those who are most enthusiastic in their labors for its prevention and cure seem to think that everyone is familiar with the measures that have been devised to overcome the disease. This is erroneous because we meet people daily who know nothing about these teachings. If those people who are ignorant on matters of sanitation are infected they constitute a source of danger to the community.

The careful management of the segregated cases, those under treatment in sanatoria and hospitals is easy compared to the difficulties experienced in properly caring for and training non-segregated cases. These may be considered under three classes: first, the mass of tuberculous individuals, who, if left to themselves, go everywhere casting tubercle bacilli to the four winds, as they pass up and down the highways and byways of life; secondly, those who transmit the germs direct to the new victims as they stand shoulder to shoulder with them in the awful struggle for existence, at the counter or in the workshop; thirdly, those who are permitted to live in the very worst confines, under the most revolting sanitary surroundings, in which they are constantly depositing poisonous material wherever they may choose to expectorate.

The fight against the spread of the disease is therefore, of necessity largely or almost wholly local. The non-segregated cases of pulmonary and laryngeal types are to be feared more than others, for the germs attack the respiratory organs by preference because of easy access and ingress, and because of the fact that they find easy exit from the body. They, therefore, find prompt and sure transportation from one host to another, which insures the propagation of the germ species. The process is infallible and a new crop of germs is assured, if any are permitted to gain access to new soil. Prevent such transference and the control of the disease is accomplished. "To prevent the spread of tuberculosis or not to prevent it—that is the question."

In further consideration of my subject, I will prove that the non-segregated cases are the unknown quantity in the equation, and point out that they are present (many unrecognized) everywhere. If a modern Canaanite were to prepare a marriage feast and send out invitations to all to come in from the byways and hedges, he would find some difficulty in placing his guests, if he were to plan to exclude those suffering from tuberculosis. The disease is distressingly prevalent, but better conditions will be brought about when all the people are taught to care for their bodies so well that they cannot become a nesting place for bacilli. The common sense plan is to educate the masses. The medical profession has already accomplished great things in this line. Many more remain to be undertaken, as the subject is only beginning to be understood.

Physicians should give up more time to the tuberculous person in the consulting room than is usually done. The interest shown is always appreciated by the patient. In case we suspect tuberculosis because of the prevailing sysmptoms and cannot make a positive diagnosis, frequent subsequent physical examinations and sputum analysis should be made until the patient is known to be free of the disease. It seems to me that if it is good practice to request patients who are likely to develop renal trouble, to report for examination an urinalysis at stated intervals, it is just as good practice, and even more important, to make frequent examinations of those who are expected to develop tuberculosis.

Fifty or a hundred negative examinations may be made to one

positive finding, but if one life is saved thereby, the compensation for labor expended would be worth the while. The members of the profession should use the press to disseminate a knowledge of the subject. There is so much that is false in the conversation of individuals and in the traditions of communities that reputable physicians should publish the facts over their own signatures. No class of persons is so considerate of the public good or so unselfish as they. These articles should include reasons why laws should be enacted requiring segregation of all cases. Segregation need not be accomplished by legal force if the people, as well as the law-makers are convinced that it is a good thing to do, but compulsory segregation, I take it, will have to be practiced before the disease will be controlled.

By segregation I do not mean imprisonment nor a hard and fast quarantine, but I call for a kind of segregation that will permit the patient to have all the comforts enjoyed in health. To accomplish this we must remove any misapprehension from the public mind. To them the word comprehends close confinement. It is understood to mean the same thing as the isolation of the leper, and the thought is unattractive. It is, however, not necessary to remove the patient who is properly careful on account of infectiousness, but rather in order to practice scientific prophylaxis. It would be a fine thing if we could bring our cases together, in small, well equipped, comfortable colonies, in every community. I believe more cases could be reached and successfully treated if each county in the state had its own colony.

The last two Legislatures appropriated a total of three millions of dollars for tuberculous work. 112 tuberculosis dispensaries have been organized. In building and maintaining these, two-fifths of the money already appropriated has been expended. The largest portion of the balance has been used in the work at Mont Alto. Therefore, the state is expending an enormous sum of money there, and at present it is caring for only 630 patients. Compared to these results, I believe there would be many advantages if the state were to appropriate $670,000.00 to be used in building up a colony in each county. The individual farms, already owned by all the counties, could be made the location of a colony wherever they are favorably situated for such purpose.

The cost of a comfortable cottage that will accommodate eight persons is approximately $1,000.00. Each county could therefore build ten of these and care for 80 people on such appropriation; or all the counties could treat 5,360 patients. In the year 1908 there were 10,181 persons died of tuberculosis in Pennsylvania. The counties of the state could accommodate this number of cases if two such appropriations were made, if the grafters were kept out and all the money used for buildings. The furnishings could be gotten by popular subscription and the maintainance and care could be provided by the patients themselves or by the county as it does for its other indigents. The people who need this help most, will accept it more readily if we can make obsolete such words as pest house, poor house, alms house and asylum.

Again, if we are going to stamp out the disease we will have, in the several sanatoria now building by the state, very expensive hospital plants that will in the end be useless.

We have acts providing for the registration of all cases, and they are good measures as far as they go. I am in favor of reporting all cases, but there are two important phases in which compulsory registration is found wanting. First, many cases are merely reported and nothing more is done; secondly, the report is not made until the case is more or less advanced. There is a story to the effect that when Columbus discovered America, the natives called up Queen Isabella by long distance 'phone and notified her that they were discovered. The present tuberculous citizens of this country are just as likely to notify the Health Boards that they have the disease as were the aborigines to have done what the story sets forth. This emphasizes the difficulty there is in reaching a great many of the cases that should have oversight. They need oversight because of the fact that germs will come away with the debris and in the sputum form a new tubercle and be just as potent for evil as those from an old cavity. A patient cannot be reported until he is known to be infected. He is not known to be infected until his physician finds the symptoms and physical signs; these are discoverable only when there is sufficient development of his trouble to produce them. Therefore, registration falls short, because the case will have gone over a more or less lengthy period of infectiousness before it can be gotten under control. We

are glad to give the prospective cases the benefit that may arise from registration of present victims, but succeeding generations must be educated before their progeny will be safe from possible infection.

I wish to recommend a plan that I believe is perfectly feasible, that will reach the rising generation at the impressionable age; namely, to urge the Commissioner of Health of the state to prepare such sets of pamphlets, charts and photographs as might serve to educate children, for distribution to the various public schools throughout the commonwealth, in such manner as library books or zoological and botanical specimens are now distributed to them.

In addition to this outfit a classical tuberculosis exhibit should be prepared by the representative of his department, the Medical Inspector, in the county seat of each county for the benefit of its citizens. The exhibit could be placed in the Tuberculosis Dispensary of the county. The public school teachers should be directed to visit and study the exhibit at the time of the meeting of the annual county Teachers' Institute. The interest of the teachers would be assured if the County Commissioners were to make room on the program for an illustrated lecture on tuberculosis by a competent person. If the public school teachers and their pupils know the nature of tuberculosis and its mode of propagation, the knowledge will have reached the place where it will do the most good, and the spirit of tuberculosis prevention will be found in the home —the foundation of the race—in the next generation.

The individuals who possess that spirit from infancy will be the ones to really stamp out the disease. In such homes the children will have individual rooms and beds, and they will be given personal individual utensils and drinking cups. It is gratifying to note, in this connection, that various transportation companies have already taken up the matter of providing individual cups. They have installed a device in their coaches that dispenses an individual drinking cup filled with water. The device is so constructed that by placing a penny in the slot and turning a crank, the passenger can get a new clean cup with each drink of water. The railroads first to adopt the device are those who transport many people who are known to have tuberculosis. This is as it should be, but those who know that they have the disease are usually careful, and the

benefit derived from these precautionary measures will be the protection of passengers from the germs of the non-segregated uninformed cases. Such devices should be in use everywhere. New York authorities have already endorsed the individual drinking cup for hospitals and schools; other cities are sure to take the matter up.

Lastly, the points I wish to leave with you for especial consideration are: First, the management of the non-segregated cases; second, the establishment of small local colonies, and, third, the education of the masses through the public schools and the public press. In conclusion, I desire to urge this subject as of sufficient importance to warrant the establishment of a special bureau in this society. For, if 10,000 people die of the disease annually in this state, we Homœopathists to whom is entrusted the care of our share of these victims, must keep the fight constantly before us, in order that we may ever be in the forefront in our chosen profession, even as the great founder of our great system of practice was ever foremost.

DISCUSSION.

DR. CHARLES PLATT: Tuberculosis is in rather a delicate position at the present time, from the fact that it has been so much talked of in the last twelve months that people are rather tired of it, and they are very apt to drop back now into a period of carelessness. I believe the suggestion of Dr. Hartman—that the matter is of sufficient importance to indicate the establishment of a bureau, or at least of a committee, in the State Society—is a good suggestion.

DR. ARTHUR W. YALE: In tuberculosis, as in the talk that Dr. Platt gave us a few minutes ago on the purification of water—prevention is better than rottenness; so in the case of tuberculosis: and I believe our efforts should be put forth first for prevention; and if the amount of effort which has been expended in the last year were put forth in absolute prevention of the disease, rather than so much talk, I believe we would have accomplished more results. To this end I want to bring before this society a report of a paper read by Dr. Cole last year before the Pennsylvania Society of Physico-Therapy, in which he exhibited over 200 slides

of radiographs he had made of chests. In many of these the tubercular lesion had been discovered from three to six months ahead of the appearance of any physical signs. Several cases were submitted to some of the best diagnosticians of the city of New York; and they could not find any tubercular lesion, and that from three to six months after the original radiograph had been made.

This brings me to the point where I want to suggest to the members of this society that it might be well to have their patients radiographed. When patients who are losing weight, or for some other reason seem to be in a run-down condition—in all cases, in other words, where a positive diagnosis could not be made, showing the reason for the run-down condition; in these cases if the radiograph were made and a small lesion found, the cure of the case would be rather easy.

Another source of infection, I believe, and one of our greatest sources of infection, is our street cars. I am sorry Dr. Boileau's paper could not be read today. I believe that our street cars are hotbeds for the propagation of tuberculosis. Victims will expectorate on the floor of the car; and even if they do not expectorate there the coughing in the close atmosphere is enough to infect every one in the car; and when you consider that in a small space, a very small air space, are sometimes found 120 individuals with a ridiculous insufficiency of ventilation, it is of rather serious moment; and I believe this is a matter which we, as physicians, should take up in our several localities.

THE HOUSE-FLY NUISANCE.

L. H. HENDRIXSON, M. D., NEW HOLLAND.

It has not been many years since we were taught that flies were rather useful as scavengers, and for that reason to be looked upon as beneficial. Nowadays we know better, though the old notion still prevails in many quarters. The fact is they merely help to distribute the filth in which they are born and live upon, and in a passive way carry whatever germs may be present there.

The absolute necessity of fighting flies in a systematic manner is every day becoming more apparent. The very filthiness of these

insects should be enough to bring about such action apart from the fact that they carry disease germs. The house-fly breeds only in filth—preferring decaying matter and its favorite breeding place is a manure pile or cesspool.

The house-fly is responsible for the distribution of certain diseases whose causal agent enters the body through the food. In other words, it is to blame for the epidemics of intestinal disease mostly.

Of the disease germs which they may carry, the most important are those of typhoid fever, dysentery and epidemic infantile diarrhœa. These it gathers on its hairy legs by feeding on improperly disinfected discharges, or those which have not been disinfected at all; by crawling over the soiled clothing, or even on the patient himself.

From experiments that have been made, flies contaminated with typhoid germs retained them in a living condition for three weeks. The germ-laden material may be eaten by the fly—it having been proved that the typhoid germ may pass through the intestinal tract of the fly and still remain alive—thus making even the "fly-spot" dangerous.

While the role of the fly in distributing tuberculosis is a debatable one, it is known that it will devour the sputum of consumption and the tubercular germ has been found in its intestinal contents.

A knowledge of the life history of the fly is necessary in order to inaugurate intelligent measures for its control.

In the first warm days of early spring, a few adults which have hibernated in some sheltered nook come forth to start the brood. The eggs are small white objects about .04 of an inch in length and are deposited in large numbers—one female laying as many as 120 in 14 hours. In 24 hours at the most, and under favorable condition as to heat and moisture, even in 8 or 9 hours, these eggs hatch into small white larvæ. This stage is comparable to the "wiggler" stage of the mosquito. These larvæ have rudimentory head at the pointed end. They grow rapidly, casting off their skins every 24 hours for 4 days. Five days after hatching they round up and the skin changes to a hard, protecting case, and in this case the fly passes the second or pupal stage of its

existence, which lasts from 5 to 7 days. The adult makes its entrance into the world by pushing one end of the puparium, which opens like a lid. Thus only 10 to 14 days after the eggs are laid there is a new generation of flies ready to perpetuate the race. I leave it to the mathematician to compute the approximate number of progeny which might be the offspring of a single pair of flies if the proper food supply is available, and it is right there that a beginning must be made in fighting the house-fly nuisance. By preference, the fly breeds in horse manure, and the fly lays its larvæ and pupal life almost always in manure. Failing this, they will breed in any waste or decaying substances—therefore, the whole scheme of extermination should be based on a proper disposal of the waste in which they breed.

A uniform method cannot be adopted everywhere for the eradication of flies, but the following are all easily applicable rules to follow:

All manure should be hauled out and spread on the soil daily, or at least once a week. In the open it speedily dries and is no longer useful as a breeding place, and it has been proved that the daily or weekly spreading of manure is good farm practice. If it is not convenient to do this, the manure pile or pit should be screened to exclude flies, or treped with lime.

Disinfect thoroughly and screen all cesspools.

Pour kerosene into all drains and treat with the same disinfectant all waste material not intended for fertilizing purposes.

Do not allow any decaying organic matter to collect. If the cellar is damp, clean out the corners frequently and apply lime to the wet places.

Have a tight fitting cover for all garbage cans and dispose of all garbage daily.

Screen windows and doors to prevent the entrance of flies and wage incessant war on those that do manage to get into the house, by means of the sticky fly papers, poison papers and the like.

Finally, let me remind you again that the fly is born and raised in filth, so the probabilities are when you see one walking over your dining room table, that it has come from some pile of decaying organic matter, and for that reason deserves to die.

MODERN METHODS OF SEWAGE DISPOSAL.

C. F. Mebus, C. E.

Civil Engineering in the early days had to do principally with such work as measuring land, laying out roads, canals and railroads, and the construction of viaducts and bridges or work entirely of a mathematical and constructive nature. The rapid development of this country has largely been made possible by the work of the engineer.

In more recent years the needs of populous communities have brought before the engineer problems of a different character and a new branch of engineering, known as "Sanitary Engineering," has been developed. Sanitary Engineering has to do with the heating and ventilation of buildings, purifying and supplying water, drainage, sewerage and the disposal of sewage, cleaning streets and destruction of garbage and wastes. These matters all directly affect the health of the people and it is not hard to see how the work of the physician and the sanitary engineer co-operate in the interests of public health.

The science of bacteriology has pointed out to both physician and engineer the causes of infectious diseases, and the ways in which the same may be transmitted from one person to another, and to the engineer it has pointed out a way for taking out of the water the organic impurities. The work of preventing the spread of infectious diseases by supplying pure water and by disposing of sewage in a sanitary way has been largely done by the engineer.

To better understand what "Modern Methods of Sewage Disposal" means, it is perhaps well to see, first, what sewage is, why we have it and what measures have been taken by the authorities to keep natural water courses free from it.

Sewage may be considered as coming from two sources, viz: domestic and manufacturing. In the former the sewage is but the water used in dwellings, to which are added all the filth and wastes from toilet, bath, kitchen and laundry. Years ago, before the introduction of running water into dwelling houses, the problem of disposal of the human wastes was done in a more primitive way than

at the present time, but often with great menace to health, especially in communities where the water supply for the house was taken from a well. The introduction of running water and modern plumbing in dwellings has not only added to the convenience of living, but even to the health of the people, provided, of course, that the water supply through the house is pure and that the wastes are quickly and positively removed. At first, such wastes were but conducted into a nearby cesspool and this is even done now, but where the soil is heavy, such a scheme will soon become a nuisance and connection with some public or private drain or sewer system becomes necessary in populous communities.

Wastes from manufacturing establishments are produced in the same way as domestic wastes, that is to say, water is used in industrial establishments for washing, dyeing, cleaning and other purposes, and while being so used is mixed with dirt, filth, dye-stuffs, soaps, acids and other matters which make it impure. Naturally, the easiest way to get rid of it all is to conduct it away from its source by pipes or sewers to some water course.

Now, the discharge of domestic and manufacturing wastes into streams has, in innumerable cases become a nuisance, and property owners, municipalities and water companies who had a common law right to the use of the water of the stream in its pure state, below the point of the discharge of the wastes or sewage, were obliged to appeal to the courts to abate these nuisances. Such procedure was not only slow, but expensive and often ineffectual and as stream pollution increased, the Legislatures of the various states took cognizance of the evil by enacting laws forbidding stream pollution and empowering certain officials to deal with violations of the law.

Massachusetts was the first state to enact legislation of this kind. It also created a Board of Health which began more than twenty years ago to investigate the changes taking place when sewage is treated on various forms of filters. Both chemical and bacteriological investigations were made and the reports of the State Board of Health of Massachusetts, containing the results of these investigations form a most valuable part of the literature on the purification of sewage. This Board not only made investigations, but

gave advice to municipalities and others within the state concerning filtration of water and purification of sewage, and so it came about that much important work was done in this state considerably in advance of other states. The work became a model for others, and the men connected with doing it acquired a prestige which they easily hold to the present day.

Other states, too, in time began to take an interest in health matters and State Health Boards became more and more active, State legislatures from time to time gave such Boards greater authority until a number of them became, as they should be, one of the most important official bodies in the state.

Pennsylvania had for years a State Health Board, on which served many able men, but on account of the limited means with which the Board was provided and the small powers it had, it was never able to accomplish a great deal. In 1905 the late Senator Roberts, of Montgomery county, introduced a bill in the Legislature abolishing the old Board and creating the new office of the Commissioner of Health. This new officer was vested with great power and supplied with ample means to carry out almost any work in the interests of the public health that he might see fit. The governor was fortunate in securing for a commissioner, one of the best, if not the best equipped man in the state, and so well has the present State Health law been administered, that the Legislatures of other states have enacted either the Pennsylvania law in its entirety, or revised the existing laws so as to conform practically to what we have in this state. So that today seven or eight of the most important States in the Union are actively engaged in a campaign against all communicable or infectious diseases. Part of this work naturally covers the prevention of stream pollution of state waters. Not only are these State Boards working along the same lines in their respective territories, but they are also co-operating in the work of freeing the interstate waters from pollution. At the present time the Boards of New York, New Jersey, Pennsylvania and Ohio are working together in this way, and possibly others.

The same problem which confronts our own state at the present time has confronted the older countries in Europe years ago; es-

pecially is this true of England, where the streams are small, population dense and the manufacturing industries numerous. English municipal corporations have, within the past thirty years, expended millions of pounds sterling in the construction and operation of sewage disposal works and the work is still going on. So, many men have been working on the same problem practically at the same time, but in different cities all over Great Britain, that almost every scheme of sewage purification that gave any promise at all has been exploited and while English experts are still not united as to the best method to employ in every case, yet the art of sewage purification has been developed along practical lines to such an extent that almost any sewage may be purified to whatever degree is necessary or desirable. Improvements, of course, are to be looked for, and it is to be hoped that shorter and less expensive methods will be brought out in the future.

The work done in England has become known all over. English sewage disposal works have for years been a mecca for Engineers and others interested, and on the visitors' book which is kept at nearly every works, one may find the names of men from all over Europe, Africa, India, Australia, Japan and America. Much, too, especially in the last 15 years, has been written about English works, and it is not surprising to find Germany and America adopting the latest English schemes.

The first scheme, known as "broad irrigation," was to spread the sewage over land. For this purpose, land is generally ridged and furrowed and in some instances, even underdrained. The sewage as it is discharged over fields, runs along the furrows and is generally absorbed by the soil. From two to ten thousand gallons of raw sewage may be treated on once acre of land in 24 hours in this way. Successful sewage farming depends, of course, largely upon the character of the soil, and unless the same is dry and porous, the scheme is hopeless. A number of English cities still treat their sewage on land either in its raw state or after it has been subjected to some preliminary treatment. The sewage farms of Paris and Berlin are probably the best known. The latter is operated some years at a small profit. Broad irrigation has been used to some extent in this country, but only with success in the

arid lands of the far west. In Southeastern Pennsylvania a number of smaller farms have been laid out for this us, but all of them are either now, or will be in the near future, abandoned, for the reason that the heavy soils found in this locality are quite unsuitable and during periods of heavy rain and extreme low temperature, the sewage is not absorbed, and, therefore, reaches the streams with but a small per cent., if any, of its impurities removed.

Broad irrigation will no doubt be used for a long time as a means of sewage purification for country houses and small institutions, or where much ground is available for comparatively small quantities of sewage.

A second method of purification, much used in Massachusetts and to some extent in other states, is very similar to broad irrigation, and is known as "Intermittent Sand Filtration." In localities where suitable sand for preparing filtration fields may be cheaply obtained, or where it may be found in place, no better scheme can be adopted. The sand fields may be underdrained at a depth of about two or three feet. The entire filtration area is divided into a number of small fields or beds on which the sewage is discharged in rotation. For example, the sewage may be spread on one bed for a period of about 24 hours or less, and then on the next following bed, and so on, the first bed resting until all the others have been dosed in turn. By this method, comparatively high rates can be obtained, possibly 100,000 gallons or more per acre in 24 hours, the rate depending, of course, largely on the amount of suspended matter in the sewage, the temperature, porosity of the sand, rainfall, underdrainage and intelligent superintendence.

The difficulty of procuring land suitable for broad irrigation near to cities and at a reasonable cost, is one of the reasons that investigations along other lines were made, and the next development in sewage purification was by chemical means. In the above processes sewage was simply spread over land in practically its raw state or with no other preliminary treatment than passing it through a screen, which made it possible to purify but a small amount of sewage per acre. A method for taking out a large part of the suspended matter before applying the sewage on land or discharging it into streams was therefore most welcome and the first scheme

which offered itself was one employing chemicals. In this method the sewage is allowed to stand for some time in large rectangular tanks and while it flows into the tanks it is mixed with a chemical compound such as ordinary lime, ferric sulphate, aluminum sulphate, alumino-ferric or sulphuric acid. The chemicals cause the suspended matters in the sewage to fall to the bottom and hence the name "chemical precipitation." The clarified water may afterwards be drawn off and discharged directly into the streams, where a low degree of purification is permissable; or further treated on land or some form of bacteria bed where a high degree of purification is required. About 50 per cent. of the organic matter is by this process removed, and this residue or sludge which collects in the bottom of the precipitation tank must in some manner be disposed of. Sludge contains about 95 per cent. of water, and in this state, except under especially favorable circumstances, is quite difficult and expensive to handle. It may be further stated that with chemical precipitation, the amount of sludge produced is always in excess of the total solids in the sewage, whereas, with the biological treatment, the reverse is true. In England the sludge is generally forced on ridged or furrowed fields where it is left to dry and is then ploughed into the soil; or it is subjected to further treatment by the addition of more lime and then forced into especially designed iron presses where all the water is extracted and a dry cake is obtained which has some value as fertilizer. In some cases this cake is also mixed with coal and burned in steam generating furnaces. In Germany, in the "System Rothe," the sludge cake is mixed with coal and burned in the producer gas generators. Cities located on the arms of the sea, such as Manchester, Salford and London, dispose of their sludge by forcing the same into specially designed tank steamers, which take it out and discharge it into the sea. Within the last year or two there was put in use in Germany a centrifugal drier which promises much success. A similar scheme is in use at Reading, Pa. In manufacturing centers where the trade wastes are rich in fats, an effort has been made to extract the same with a view of deriving some revenue from this by-product. A large works for this purpose has been erected in Bradford, England, and is operated with some degree of success. Similar works, I

believe, are in use in Germany, and it is reported that a plant of this kind is in course of erection at Oldham, near Manchester.

Chemical precipitation, with or without subsequent land treatment, was extensively used in England and to some extent on the Continent for perhaps 20 years before the advent of the biological method of sewage treatment. It is even now used in English cities of which London is one, where at Barking and Crossness, on the Lower Thames, about 250,000,000 imperial gallons are treated daily. In this country chemical precipitation never gained much foothold, but I believe that about 15 years ago some ten or more towns were using it. At the present time, few, if any, are doing so.

Although for many years sewage was treated on land, it was not until about 1885 that through bacteriology was learned the nature of the changes that take place in the sewage after it was absorbed by the soil. The discovery that low forms of vegetable life known as "bacteria" or "micro-organisms" effected a chemical change in the organic matter in the sewage led the way to the preparation of artificially prepared beds or filters in which conditions were obtained favorable to the development of such bacteria as have the power to oxydize organic matter. The first real progress or practical application of sewage purification along biological lines was made in England where artificially prepared beds were constructed about 1895 at Exeter and Sutton. The process of purifying the sewage biologically is a compound one, that is to say, it is done in different stages and will require from two to four stages, depending upon the degree of purification required.

As the bacteria bed in any multiple stage system of purification effects the greatest individual change in the sewage, it is a good plan to consider it first and the other parts of the plant as pertaining to it.

The object of the bacteria bed is to hold back the organic matter in suspension in the sewage while the same passes through the beds and at the same time to allow the oxidizing or nitrifying bacteria to chemically transform the organic matter into harmless chemical compounds. This is accomplished by passing the sewage through some form of coarse grained filter, and roughly speaking, a bacteria bed may be said to be a filter, which is constructed and operated in various ways.

The plan of a bed is generally rectangular, the depth of the filtering material may vary from three to six feet and the dimensions of the bed in length and breadth or the superficial area must, of course, vary with the amount of sewage to be treated in a single dose, while the entire filtering area is determined by the total flow in 24 hours and the rate of treatment that is possible per square foot in the same time.

Bacteria beds are of two kinds, viz: contact and percolating, the latter being perhaps better known under the name of "sprinkling filters." For a contact bed it is necessary to have a water-tight compartment in which is placed the filtering material. Usually the side walls and floor of the bed are constructed of concrete, brick and stone masonry. On the floor, which should be so constructed as to drain to one point, are laid underdrains and coarse materials. And on top of this is spread the filtering material, which is always coarse grained, sizes may be used varying from 1¼ to 4 inches, but should be so laid that the several sizes shall be in layers rather than indiscriminately mixed. Provision must also be made for the free passage of air through the filtering material and this is done by bringing up through the body of the bed from the underdrain pipes, which extend above the surface of the bed. The contact bed, being a water-tight compartment, must necessarily have an outlet and an inlet controlled either by gate valves or other automatic air-locking devices. The inlet may either be above or below the surface of the filtering material, but the outlet must necessarily be at the bottom and should be at the low point in the floor so that the content may be completely drained away.

The operation of a contact bed is quite simple. The bed is first filled with sewage, and allowed to remain filled for an hour or two, when the sewage is drained off and the bed is allowed to remain empty or to rest for a period of six or eight hours or more. The organic matter in suspension and in solution is deposited on or attracted to the coarse grained materials and held while the sewage is slowly drawn off. During the resting period the voids in the filtering material become filled with air and the oxidizing of the organic matters held back is effected. The length of the period of rest determines largely the degree of efficiency of a contact bed, but it is quite impossible to obtain a high rate of purification by

passing the sewage through a contact bed but once, and therefore, at a number of plants the sewage is passed through a second bed and even through a third. The sewage might be said to be passed through beds in series and the system is known as "single," "double" and "triple" contact, as the number of beds used in series is one, two or three.

The contact bed was more favorably considered as a means of sewage purification ten years ago than it is today, but its field of usefulness is by no means ended and notwithstanding certain drawbacks which are inherent in it, conditions where no other form of bacteria bed will answer, doubtless will be found as sewage purification becomes more general.

All the matters taken from the sewage and held by the filtering material are not completely destroyed, and therefore, the voids gradually become less and less and so in the course of about five years, it may be necessary to clean the filtering material; or again, if filtering material is composed of cinders or other perishable material, as is generally the case in England, much of it in time becomes disintegrated, necessitating cleaning on this account. This is an expensive and undesirable operation.

The corporation of Manchester, England, which has a population of nearly 600,000, decided in 1900 to change its method of sewage purification from chemical precipitation to biological, and ordered the construction of contact beds to the extent of 92 acres on which about thirty or more million gallons are daily treated. This is the largest single contact works in existence and will remain so, as the probabilities are that no large works will ever again be put down on this plan. Contact works of all sizes and types are numerous all over England, and I have in mind a few in this country which are worth mentioning, viz: Single contact at Charlotte, N. C., double contact at Plainfield, N. J., and Balston Spa, N. Y., and single contact with subsequent sand filtration at Marion, Ohio.

Contact beds may be operated at a rate varying from three hundred to seven hundred thousand gallons per acre per day, the highest quantity being seldom obtained.

The next in order of development is the percolating or sprinkling filter. This, too, is a bacteria bed in every sense of the word, the difference being wholly in the method in which the sewage is

applied. In the contact bed, as has already been seen, the sewage is allowed to fill the voids in the material completely and then after standing for a period, it is all drawn off. Now, in the percolating filter, the sewage is spread over the top of the bed and allowed to trickle down through the filtering material, the voids of which are never completely filled, air always being present and therefore the action of oxidation is always going on while the bed is in commission.

The body of the bed of the percolating filter is, too, made of coarse grained material, of sizes varying from perhaps ½ to 4 inches, spread in layers in the same manner as in a contact bed. The thickness or depth of the bed may, however, be six feet and no water-tight construction is required, in fact, the bed is generally constructed entirely above the surface of the ground. The retaining walls for the filtering material are laid up in the form of a dry wall or, as is quite frequently done in England, of brick masonry laid in cement with open courses. The floor, of course, is generally laid in concrete and must slope to the side or the centre where a collecting channel is provided. The plan of the bed is either circular or rectangular, to suit the particular form of spraying device used. The first percolating filters in England were of the circular type, that is, the sewage was sprayed over the bed by means of perforated iron pipe arms revolving horizontally about a vertical axis in the centre of the bed. The sewage is conducted to the arms through a central feed pipe with a head of perhaps five or six feet, and the mechanical action which causes the arms to rotate is in every respect the same as that of the Barker's Mill or the familiar lawn sprinkling device. The diameter of these beds may be from 100 to 200 feet. The distribution with this method is very good, but the scheme is rather expensive, not alone from the fact that the construction and spraying devices are costly, but also because much land between the circular areas used for the beds cannot be utilized.

Another drawback is that in windy weather the arms may refuse to move. However, this scheme of distribution has found much favor in England, where many plants of considerable size are in operation, one of the best of which is at Derby, a city of over 100,000 inhabitants. This scheme is also finding favor in Ger-

many, where there is in operation for nearly two years a large plant at Stahnsdorf which treats the sewage of a number of suburban towns outside of Berlin. In this country, I believe no rotary sprinkling plant has been used except for experimental purposes.

The second type of percolating filter is the stationary sprinkler. It was first used in England on an extensive scale at Salford, a municipality adjoining Manchester and containing about one-half as many inhabitants. With this scheme there is laid on top of the filtering material in gridiron fashion iron pipe on top of which are set at regular intervals of about 10 feet, small brass nozzles. The sewage is forced through the nozzles under a head of about five or six feet, which causes it to spread out over a circular area having a diameter equal to the distance between the nozzles on the pipes. The largest works of this type are at Birmingham, England, where 26 one-acre beds are now in operation, which take the city's sewage, amounting to nearly 30,000,000 gallons in dry weather. Before the percolating filters were used at Birmingham, the sewage was treated on land, for which purpose the corporation provided 1,700 acres, and even this large area was insufficient for properly purifying the city's sewage during the last few years.

The Birmingham plant is the model after which all the recent large sprinkling filter plants in this country have been patterned. Columbus, Ohio, Washington, Pa., and Reading, Pa., are the largest plants now in operation. This type of distribution is adapted equally well to small and large installations and for this reason, as well as from the fact that the entire bed may be sprayed automatically by means of a syphon discharging at intervals into the distributing system without the intervention of any moving parts, it will, no doubt, be extensively used within the near future. It might be added that plans for sprinkling filters have been adopted by the Department of Health for nearly all the large state hospitals, some of which were designed by the author.

As already stated the American plants are modeled after the English, the main difference being in the position of the distribution system, which in this country is laid through the body of the filtering material and in the type of the nozzle used. American nozzles are considerably simpler than either the Birmingham or the Salford nozzle, and spread the water over a silghtly greater area.

Other distribution systems which accomplish the same results as the types of distributors already described have been put in use in England within the last few years, the one is a water wheel device, in which an undershot wheel of a small diameter, and with an axis equal to the width of the bed distributes or splashes the sewage over the bed from the vanes into which the sewage is discharged from an overhead moving tank. This device may be so arranged that the distributor which sets on carriages moves over the bed by reason of the sewage falling into the vanes of the wheel. This type of distributor is equally well adapted for circular and rectangular beds. Another distributor for rectangular beds is moved backward and forward by a cable and sprays the sewage in the same manner as do the rotating arms of the spraying device for circular beds first described.

As stated at the beginning, the biological process is done in stages of which the bacteria bed is but one. It is quite evident that were raw sewage allowed to flow into a contact bed the voids would soon become clogged and in the same manner, if it was attempted to spray raw sewage over a percolating bed, the small orifices or nozzles would be choked up all the time. Now, in the original contact beds at Sutton, the attempt was made to treat the sewage raw, or at least with but preliminary rough screening in the contact beds and the trouble of the filling up of the voids in the filtering material was soon encountered. While on the contrary, Exeter, where a preliminary tank treatment was employed, the beds did not choke up. It is, therefore, seen that some form of preliminary treatment becomes necessary, and the one that gave at first the greatest promise was the tank treatment at Exeter, which the inventor, Mr. Cameron, called a "septic tank," and which has been ever since the model for all tanks, good, bad and indifferent, of a similar description. In fact, the septic tank has for some reason or other obtained such a hold on the popular mind that one not infrequently hears the name "septic tank" erroneously applied as a system of sewage purification complete in itself.

The purpose of the preliminary tank treatment, be that the so-called septic treatment or just plain sedimentation, is to remove from the sewage as far as possible all matters in suspension. At first it was thought and even claimed that the septic tank, or rather

the bacteria in it, would destroy, liquify or gassify a large part of the organic matter in the sewage and for this reason it was thought by some enthusiasts that septic tanks would never need cleaning, and that the sludge problem which had heretofore caused so much trouble, was for all time successfully solved. Years of use, however, proved different. The depth of a septic tank may be from 6 to 12 feet, or even more, the length may be from 3 to 5 times its width and of course in larger works it is quite desirable to have a number of tanks, or one tank divided into a number of rectangular compartments. In operation, the sewage is admitted at one end of the longer axis through a submerged inlet, and then flows slowly towards the opposite end, where it discharges through a submerged outlet. In the original tanks the capacity was about equal to the entire daily flow of the sewage, and therefore, it required a period of 24 hours for the sewage in the tank to be entirely displaced by the succeeding day's flow. It is quite apparent that with such slow velocity, all matters heavier than water would fall to the floor, and matter lighter than water would rise to the top. Now, the bacteria which may develop in a tank of this kind does so without air and is known as the anaerobic type. A certain amount of liquifying and gassifying does result in the organic matter in the sewage and probably a net change of 25 per cent. may be obtained. As has already been remarked, a certain amount of sludge will accumulate in the bottom of the tank and in all well designed plants provision is made for dealing with it.

English engineers have not so closely followed the idea first brought out by Mr. Cameron, at Exeter, partly because many English plants were originally chemical precipitation plants, which necessitated the construction of large rectangular tanks, and therefore, when subsequently it was decided to use some form of bacteria bed, perhaps for economy's sake, if for no other, the chemical precipitation tanks were used as septic or sedimentation tanks.

Another form of tank used for a number of years in Germany is cylindrical in plan with a diameter of perhaps 25 feet and a depth of even more. The bottom of this tank is in the shape of an inverted cone, the sewage is discharged at or near the bottom and flows out over a wire extending across the centre of the tank at the top. The sludge accumulates in the conical bottom and may

be forced out by the head of the water above it, where an outlet sufficiently low is available, or else drawn out by suction. This tank is known as a "Dortmund" tank and is used in Birmingham, England, in connection with the rectangular sedimentation tank, both before and after the sewage passes through the percolating filters. At Birmingham, the original sewage farm on which this plant is located, has a length of about 5 miles. The main sewer from Birmingham discharges at the upper end of the farm where the sewage is screened and passed through a series of rectangular tanks. From these the sewage flows through a conduit for a distance of almost 6 miles and then through the Dortmund tanks with the object of further taking out the suspended matter and from the Dortmund tanks the sewage is sprayed over the beds under a head of about 5 feet. The effluent from the bed is again collected and passed through a second Dortmund tank to take out the humus or stringy matter, which detaches itself from the filtering material and is carried along with the effluent. In fact, it appears to be quite necessary with all the percolating filters where coarse grained material is used to subject the effluent from the beds to secondary sedimentation.

Sewage treated in the manner described on percolating filters may be expected to have from 80 to 90 per cent of its organic matter removed when operated at the rate of 1 to 2 million gallons per acre per day.

It must not be overlooked that some form of screening before sewage is admitted to a septic or sedimentation tank is quite desirable and an almost innumerable number of screening devices have been constructed and are being used in various parts of the world. Where power is available to employ some form of rotating or self cleaning screen, much may be accomplished in this way.

The degree of purification from a single contact bed may be from 65 to 85 per cent., and where a higher degree is required, recourse must either be had to treatment in beds in series or sand filtration. The same is true of the effluent from a sprinkling filter. The effluent from either of the bacteria beds should be so clear that sand filtration is possible at comparatively high rates. Sand filtration is, of course, expensive in many cases, especially where sand suitable for such purposes must be conveyed a great distance. If

therefore, it becomes necessary to make sure that all pathogenic bacteria in the sewage be completely destroyed, there is still another method available, viz: disinfection. The original outlay for a scheme of this kind is, of course, small, but there is a daily expense for chemicals. Experiments have been made in Germany, England and in this country and a number of chemicals such as lime, sulphuric acid, copper sulphate, chloride of lime and others may be successfully employed, but the expense seems to bar out all but chloride of lime at the present time.

In a general description such as this, but one more point need be considered and that is, operation and supervision. In all English works of considerable size an educated engineer or chemist will be found to be in direct charge. Laboratories are generally found at the works and a chemist or chemists constantly employed. Tests of the sewage raw and in its various stages through the works are daily made and records are systematically kept so that a works manager knows exactly the performance of his works. It is not surprising, therefore, to find that these men really know what they are doing. In England it is of course quite necessary that works be managed in this way, as the Local Government Board, which has charge of the purity of the streams in the drainage area over which it presides, makes a practice of regularly inspecting the effluent in the various sewage works and testing the same, to see that the standard set by it is obtained. Smaller works always have some attendant even though the size of it does not warrant the regular employment of a chemist. One may, however, be quite sure to find almost every plant in charge of a competent and conscientious man and may be equally sure to find that the best possible results under existing conditions are obtained. If municipalities in this country are to spend larger amounts of money to construct purification works, it will be necessary to employ similar methods.

DISCUSSION.

DR. CHARLES PLATT: I wish personally, and for the society, also, to thank Mr. Mebus for the care with which this paper has been prepared. We have a very valuable contribution to our transactions in this paper. While it is too technical, undoubtedly, for most of us to follow or profit by for the moment, we doubtless will

find it very useful for reference in the Transactions of the society. We have an expert's point in view, in the review of these various mthods which have been used for the disposal of sewage; and there is certainly no more important question in sanitary science than the disposal of sewage. It is getting back to the beginning of things. We talk of the fly nuisance and antisepsis, and so on, but the infection goes back almost invariably to sewage or corresponding discharges. The purification of water supplies becomes unnecessary if we dispose of our sewage. If we can keep our water supplies clean by keeping sewage out of them—untreated, undestroyed sewage—we shall certainly be in much better condition. As an engineer once said, it would be very desirable if our water supplies could be approached from the standpoint of innocence, rather than rottenness. The matter of purifying the water after it has become contaminated is going about it in the wrong way. If we can keep the waters reasonably clean in the beginning, the water supply question is settled to a degree, as is also obtained a certain reduction in typhoid; and, as has been proven in various investigations in the last twelve or eighteen months, not only will a pure water supply bring about a reduction in typhoid, but a reduction in many other diseases which are not water-borne, but which are developed through the fact of lowered body resistance by the use of contaminated water; the effect being very much as is found in the breathing of contaminated air—the reduction of body resistance opening the body to the invasion of disease-producing germs; so that not only sewage disposal is far-reaching, not merely the question of getting rid of something that is disagreeable; but it is getting back at the root of things in the prevention of disease, and is one of the most important subjects, undoubtedly, from a sanitary point of view.

DR. ANNA C. CLARKE: I have been very much interested in the question of the disposal of sewage, both here and all over our state. We had an epidemic of typhoid fever here some time ago from the pollution of our water supply, which has occurred repeatedly all over the state; and while I believe we must take care of the sewage of any kind, I think there is another element that will have to be looked after, and means provided to also take care of the sewage from our railway trains, and stop the pollution of the

streams. Nearly all railroads delight to build their roadbeds along the line of least resistance and go down over our mountain-sheds; and these good doctors from Philadelphia send their patients up into the Pocono to convalesce from their typhoid epidemics and we get the result; and I think that the time will come when sewage from railway trains will, as a matter of compulsion upon the railroad companies, be disposed of in their own sewage disposal plants, as it will be compulsory upon every city to have its plant for the same purpose. We are surely our neighbor's keeper, and in no sense more so than in the sewage question.

DR. M. M. FLEAGLE: I should like to ask one question; that is, in the final disposal of this sewage, are the bacteria, for instance, of typhoid fever and other diseases, supposed to be destroyed? Can the water—or what is left in the filtrate—pass on into streams with safety?

C. F. MEBUS, ESQ., C. E: The only way to test that is to make the coli communis tests. That is to say, you do not test for the typhoid germs. That might, of course, be done, but it would be a rather indirect process. The way it is done, the plant is judged by the percentage of bacteria removed. If the raw sewage has fifteen or a hundred thousand to the cubic centimeter and the filtrate has only a hundred or two hundred or a thousand—dividing, you understand, one by the other, gives the per cent. of removal. Now, of course, it is not absolutely certain in any case that every pathogenic germ has been removed; but the nearest that you can get to it is to know—or if your tests show that you have removed the 95 or 99 per cent. coli bacillus, then, of course, the effluent always goes into the streams. There is further absorption going on, of course, in the streams themselves.

DR. M. M. FLEAGLE: In that when you speak of being removed—are the bacteria destroyed?

C. F. MEBUS, ESQ., C. E.: They are destroyed.

MEMBERS AND VISITORS REPORTED PRESENT AT THE MEETING

Ashcraft, L. T.
Baker, W. F.
Bartlett, Clarence
Barthmaier, O. F.
Berlinghoff, G. J.
Bernstein, Ralph
Betts, N. S.
Blackburn, E. C.
Blake, Eva N.
Bierman, H.
Brewster, F. D.
Brickley, E. W.
Brooke, J. A.
Bunting, H. M.
Carmichael, T. H.
Casselberry, R. C.
Chantler, I. B.
Chapman, Millie J.
Clark, E. P.
Clarke, Anna C.
Craig, J. P.
Cranch, Edward
DeWitt, G. M.
Dietz, W. G.
Dinsmore, S. W. S.
Dreher, E. C.
Dunnell, H. L.
Ege, John
Elliott, J. D.
Farrington, E. A.
Fleagle, M. M.
Fox, C. D.
Garner, A. R.
Gerhart, W. L.
Glenn, E. A.
Goff, Ella D.
Golden, G. M.
Gramm, E. M.
Gramm, T. J.
Grier, O. K.
Haines, O. S.
Heilner, H. F.
Heimbach, A. E.
Hemington, J. G.
Heritage, J. B.
Hill, E. H.
Hanley, C. H.
James, D. B.
James, J. E., Jr.
Johnson, Theodore
Johnston, Anna
Kenworthy, J. M.
Kinney, C. S.
Kistler, D. S.
Kistler, G. M.
Kistler, J. S.
Kistler, M. S.
Kistler, S. W.
Kistler, W. E.
Kline, D. C.
Korndœrfer, Aug., Sr.
Lane, N. F.
Mackenzie, G. W.
Maddux, D. P.
Mann, S. S.
Mauser, H. S.
McClelland, J. H.
McClelland, R. W.
McEldowney, J.
Mercer, W. C.
Merrell, A. F.
Merrill, C. E.
Miller, S. S.
Murdock, Robert
Muth, F. L.
Neumuller, M. H.
Northrop, H. L.
Paxson, O. H.
Perkins, R. L.
Platt, Charles
Pond, E. H.
Pratt, Trimble
Reading, J. H.
Ridgway, Mary D.
Roberts, F. W.
Roberts, L. D.
Roman, Desiderio
Rossiter, E. B.
Schantz, H. F.
Schreiner, Emma T.
Seibert, W. A.
Sloan, M. W.
Smith, E. B.
Speakman, W. W.
Sperling, F. J.
Sunanday, F. W.
Sureth, Theodore
Swartz, J. R.
Tuller, J. J.
Vail, H. L.
Van Deusen, E. H.
Van Lenpep, G. A.
Thompson, C. C.
Ware, H. B.
Waylan, Julia G.
Weaver, H. S.
Wells, G. H.
White, R. V.
Whiteman, I. A.
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